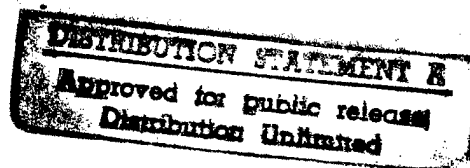


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# USSR Report

AGRICULTURE

No. 1367

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21 January 1983

## USSR REPORT

## AGRICULTURE

No. 1367

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## MAJOR CROP PROGRESS AND WEATHER REPORTING

### WINTER CROP FIELDS IN KIROVOGRAD AREA

Kiev SIL'S'KI VISTI in Ukrainian 28 Nov 82 p 1

[Interview with V.I. Zheliba, chairman, Kirovograd Oblast Executive Committee; date and time not given]

[Text] To provide for the extent of grain procurement anticipated in the Provisions Program farmers in the Kirovograd area should go above the 3,000,000 mark in its production in the present five-year plan. This task is especially important since in the first two years of the eleventh and in the last two years of the past five-year plan, oblast weather conditions were unsuitable for increasing the yield of the chief grain -- winter wheat occupying the most fields in the structure of sowing areas, almost one-half million hectares.

This fall there was also a continuous lack of rain. During August-September rainfall on most farms amounted to 8-20 mm. During mass winter crop sowing moisture reserves in the soil meter layer decreased on fallow areas to 60-80, and on unfallow areas to 20-40 mm.

Yet, regardless of weather's whims, the workers were able to provide for even sprouts on almost all crop areas. According to the latest field inspection of areas where winter crops were saved the complex of agricultural plant care measures undertaken gives reason to expect the planned wheat yield in the following year. Farms have a great deal of work now directed towards the preservation and improvement in the state of winter crops, providing for good harvest conditions in 1983. Our correspondent, M. Uspalenko met the chairman of the Kirovograd Oblast Executive Committee, V.I. Zheliba, and asked him to answer a few questions from the editors.

[Question] Volodymyr Ivanovych, the May (1982) CC CPSU Plenum requirements that the Provisions Program should be completely fulfilled under any conditions also anticipate the accomplishment of additional measures for a marked increase in grain production within the oblast.

[Answer] Of course, these additional measures approved at the last oblast party committee plenum along with previous programs and plans are the foundation for all our work to increase the effectiveness of utilizing each bit of land, as well as technology, feed and all reserves of agricultural production. These measures are directed basically towards a marked increase in agricultural stability under unfavorable weather conditions to provide a high gross grain harvest each year. A practical analysis proves that success is achieved only by those farm collectives where all agrotechnology requirements are strictly adhered to. In the present complex year farmers in Ulyanovskiy, Gayvoronskiy and Onufriyivskiy Rayons harvested about 30 and more quintals of winter wheat, whereas its average oblast yield did not go above 27.8 quintals. Leading experience suggested the chief orientation points for grain farming intensification. We reviewed the scales of the winter crop area back in the summer with the goal of improving the structure of the sowing area and the introduction of correct crop rotation everywhere and decreased it by 40,000 hectares at the same time fulfilling the sowing plan by 100.5 percent.

Being concerned with general predecessor improvement, we directed the efforts of agronomists and machine operators towards assuring high quality pre-sowing work. Without violating the optimal dates for spring sowing, we were able to complete the plowing of (remaining) clean fallow fields back in April, or two months earlier than last year. Because of a long period without rain almost a third of the winter crop area had a surface tilling and only stubble seeders were used because this sowing equipment is least likely to dry out the soil, covering the seed better and promoting uniform sprouts even when the upper chernozem layer is insufficiently moistened. Here we were able to utilize the experience of our Poltava area neighbors. On each farm in the remaining areas with a far from even soil moisture seed depth covering was determined by a differentiated method. For example, in Kompaniyivskiy Rayon, where there was more than average rainfall in August, ordinary agrotechnology was adhered to. Machine operators in Petrivskiy, Aleksandriyskiy, Bobrinetskiy and several other rayons had to cover seed with more soil with a concurrent sowing norm increase of 10-15 percent.

Adherence to the above mentioned agrotechnology and also pre- and post-sowing soil packing contributed, of course, to the appearance of more or less even winter crop sprouts. Still, plants did not yet receive a sufficient amount of moisture for further growth and development. At a time when rains avoided our area we set up constant agronomic control over each field in order to determine means and dates for crop care in time.

Question To discuss this issue more fully, would you please describe at least briefly which varieties of winter wheat were used this fall and why?

Answer I had reason to set aside this topic for separate discussion. There are still substantial shortcomings in the organization of seed-growing, and changing it over to an industrial basis for which the oblast was justly criticized at the October (1982) CC Ukrainian Communist Party Plenum. Fulfilling measures to correct the situation, we expect noticeable improvements already in the next harvest. This fall we were able to make considerable progress in the reproduction composition of the sowing material. If last year 74 percent of the total area was sown with first-third reproduction seed, today it amounts to 83 percent. In addition, the winter crop area is generally taken up by better regionalized wheat varieties: "Odes'ka-51", a stably productive, drought resistant variety, occupies 177 thousand hectares; "Dniprovs'ka-775" and "Zaporiz'ka-ostysta" which did very well in recent years in our natural climate conditions were allocated to 216 thousand hectares. The area for "Odes'ka-napivkarlykova", a new intensive variety, was also expanded. Ninety-seven percent of the winter crop area was sown only with first class seed.

Question Thank you. Now let us return to crop care.

Answer Specialists from oblast and rayon agricultural administration, oblast research station, strain testing stations and kolkhoz and sovkhos agronomists inspected the state of winter crops on each farm twice, on October 14 and November 20. Inspection reports for each field contain not only the evaluation by authoritative commissions but also fundamental agrotechnological indices for growing crops and compulsory recommendations for providing appropriate crop care. It was established definitely that 290 thousand hectares of winter crops were in a good and satisfactory state, some because of the low moisture in the plowing layer need to be re-sown. To improve the state of the more promising plants kolkhozes and sovkhozes are increasing the pace of crop top dressing with liquid complex fertilizer estimated at 1-1.5 quintals per hectare. Local agronomists select the areas for top dressing, choosing fertilizer doses according to field inspection recommendations. So that this essential work may be done within optimal dates, agricultural aircraft pilots are assisted each day by mechanized teams and brigades from rayon agricultural chemistry services and from each oblast farm. At the kolkhoz imeni 40-Richchya Zhovtnya in Bobrinetskiy Rayon, for example, using their own resources, more than 600 hectares of winter crops were already top dressed. Effective "support" was given to 25 thousand hectares, the only weakened crops in the oblast.

A second top dressing of winter crops with nitrogen fertilizer, 20 kg activated substance per hectare, is anticipated in measures for providing essential gross grain harvest in the following year. In the early spring period 280 thousand more hectares will be top dressed from aircraft and 1200 tractor units. In the remaining area ground application of mineral fertilizer will be done by special machine operator teams established on each farm.

Question Volodymyr Ivanovych, you said that some of the winter crops need to be re-sown. Certainly, only a high yield of spring crops on these areas will provide an opportunity to fulfill the grain production plan?

Answer We hope any day now to complete the tilling of all areas which need to be re-sown. I want to stress that since the fall 3 quintals of ammonia water per hectare and a sufficient amount of organic fertilizer were applied to the whole area under the future harvest. The extent of work done will allow for spring sowing over this area within optimal dates; from the fertilizer applied today we expect 5-6 quintals more harvest increase per hectare than planned.

Of course, winter crop re-sowing will introduce some changes into the spring field work on most farms since the area of early spring grain and grain pulse crops alone will increase. But machine operators will be able to take care of this. For the first time in the last ten years we were able to complete all field work in the fall. If earlier 110 to 120 thousand hectares of spring plowing remained to be done as well as the preparation of almost all fallow areas, now fall plowing was completed on November 9 over an area of 897 thousand hectares and on November 25 fallow plowing over an area of 119.2 thousand hectares. Even more, 57 thousand hectares were plowed with simultaneous application of ammonia water and almost 11 million tons of organic fertilizer were applied under the future harvest of various agricultural crops. Generally, a lot of attention is given within the oblast to improving agriculture. At present all chief kolkhoz and sovkhos agronomists are mastering agricultural crop harvest programming in oblast courses for the first time.

Question And finally, a promising reserve in the growth of grain production in the oblast is corn...

Answer Yes. Taking into account winter crop re-sowing, the area for corn for seed will increase to 200 thousand hectares, almost 15 percent compared to last year. Kolkhozes and sovkhoses are able to improve predecessors for this crop considerably expanding hybrid areas "Kubans'kyy-275", "Pioner-3978" and "Dniprovs'kyy-270" which, contrary to other regionalized varieties and primarily the hybrid "VIR-42", in recent years provided an almost twice higher yield.

Let me add that areas of spring barley will increase also, sown only with first class 1-3 reproduction seed with simultaneous row application of mineral fertilizer. Therefore, our first concern for today is for timely and high quality technology for spring field work. Estimates show that having 7,000 well repaired grain seeders as well as all soil-working equipment and tractors ready and including in the spring more than 1.5 thousand machine operators from cities and oblast rayon centers to work in kolkhozes and sovkhoses after completing machine operator courses we will be able to sow early spring grain crops in 4-5 days even under conditions which developed as a result of re-sowing. Oblast workers are anxious to make an important contribution in the third year of the five-year plan towards fulfilling the Provisions Program and decisions of the November (1982) CC CPSU Plenum.



## MAJOR CROP PROGRESS AND WEATHER REPORTING

### CONDITIONS OF WINTER GRAIN CROPS IN UKRAINE

Kiev SIL'S'KI VISTI in Ukrainian 3 Sep 82 p 1

Excerpts Weather conditions this year led to a delayed agricultural crop ripening including early grain and feed crops and winter crop predecessors. Under these circumstances soil prepared by plowing will not allow for wheat sowing within optimal dates and will not assure even sprouts.

Farms are, therefore, introducing plowless soil tillage to obtain a good harvest. Last year more than four million hectares in the republic's kolkhozes and sovkhozes were prepared for sowing using the surface method with disk-type stubble mulchers and harrows. Such tillage compared to plowing provides for a 2.5-3 quintal winter wheat harvest increase per hectare. However, it is less effective than the soil conserving technologies of plowless wheat growing developed in scientific and production research in the Poltava area. Thanks to their introduction in oblast base farms five more quintals of wheat grain are harvested per hectare than after plowing.

We shall discuss the specifics of soil conserving technologies in plowless wheat growing after various predecessors in more detail.

After corn for silage. After harvesting corn for silage fertilizer is spread evenly over the field with disk harrows BDT-7 or BD-10 to a depth of 5-6 cm. Pre-sowing cultivation is done at the same depth with steam cultivators KPS-4. When disk harrows are not available, field soil is loosened and post-harvest remnants are pulverized with disk-type stubble mulchers. The sowing bed is evened out with steam cultivators (5-6 cm deep). Wheat is sown with grain-pressing or regular seed drills.

In this year's weather conditions, when corn for silage is behind in growth and development, plowless tillage extended the plant vegetation period by 20-25 days, and allowed early field preparation for winter crops to assure even sprouts. Therefore, corn will ripen up to the milky or waxy stage and will provide the basis for high quality silage. Many farms in the Poltava area strengthen their feed basis considerably through this method every year.

Farms which do not own sweep technology can make extensive use of disk-type stubble mulchers and harrows as well as steam cultivators and spiked rollers.

Combination units AKP-2.5A, PVK-3 and others which prepare soil for winter crop sowing in one passage, have recently been arriving in the republic's kolkhozes and sovkhozes.

Plowless tillage machines are highly productive. They provide savings in work losses, fuel, oil and expenses. In anti-erosion winter crop tillage after peas compared to plowing 0.27 man hours are saved, 3.98 kg fuel, 3 rubles, 94 kopeks in money are saved on each hectare; after corn for silage -- 0.48 man hours, 12.2 kg fuel and 5 rubles, 43 kopeks respectively.

Plowless tillage technology provides for timely and high quality soil working and winter crop sowing. Agricultural worker experience in the Poltava area over many years serves as evidence.

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## MAJOR CROP PROGRESS AND WEATHER REPORTING

### CARE OF WINTER GRAIN CROPS IN UKRAINE

Kiev SIL'S'KI VISTI in Ukrainian 13 Aug 82 p 2

Excerpts Each year, including the present, winter crop sowing conditions are different. A later ripening of agricultural crops causes a decrease in the time for soil preparation creating a certain amount of tension. This requires additional efforts for accelerating the pace of essential work.

Soil preparation and crop care should take into account that heavy rains and incomplete application of a complex of agricultural measures on a number of farms led to considerable field weed infestation, an increase in the number of pests and the spread of diseases. To save crops from the above there should be a minimum of winter crop allotment after stubble predecessors, and essential measures must be taken to combat diseases and pests.

An improvement in the crop structure being undertaken in the republic permits a cut in stubble predecessor area by almost one-half compared to 1980-1981 and provides an appropriate increase in the area of better predecessors.

Farms in Donetsk, Kirovograd, Voroshilovgrad, Cherkassy, Khmel'nitskiy and Rovno Oblasts provide an incentive for the most rational winter crop allotment. Here 60-70 percent of winter crops are sown after better predecessors. Corn is one of the better unfallow predecessors raised for silage with previous application of a required amount of fertilizer. As a winter crop predecessor it should be used according to crop rotation needs and should definitely not be replaced by stubble predecessors which provide a crop shortfall of 5-10 and more quintals per hectare.

After corn (its harvesting for silage this season will almost coincide with the early permissible winter crop sowing dates) soil should be worked mostly to a depth of 8-10 cm with the same equipment that is used after peas.

In present conditions special attention should be given to the preparation of the areas after spiked crops. Everything should be done to accumulate as much soil moisture as possible and to protect winter

wheat from diseases and pests, especially grain weevils and root rots. Immediately after harvesting winter crops the field is mulched to a depth of 6-8 cm and plowed to a depth of 16-18 cm with plows combined with rollers, later harrowing and cultivating to level and prepare soil surface for sowing. In the absence of soil moisture after a stubble predecessor surface tilling with disk harrows and plowshare stubble mulchers should also be used. Experience shows that with sweep and surface soil tilling under winter crops the most effect is obtained in the steppe and forest-steppe zone with insufficient moisture, and also on sloping areas.

Winter crops should be sown on time and well. The benefits of optimal sowing dates in harvest formation were especially evident this year when as a result of inexcusably early sowing in a number of oblasts in various zones of the republic there was plant overgrowth, a decrease in their winter hardiness and susceptibility to rust, mildew, root rots, and an infestation with grain weevils, etc. These crops became considerably thinned during fall, winter and spring and were even completely lost over part of an area in some farms in the south of the republic. This year's threshing results show that the early crop yield is one and a half to two times lower than from optimal sowing dates.

Good quality seed guarantees high yields. This year winter crop grain was formed and ripened under complex weather conditions. Therefore, it is mostly uneven in weight with a considerable amount of shriveled grain so that special care should be given to prepare high-quality sowing material for the whole area. Seed material should not be taken from lodged crops (during early dates especially) and those considerably affected by root rots, infested by false chinch bugs and other diseases and crop pests.

Crops should be protected from pests and diseases. Some farms still underestimate the importance of seed chemical treatment postponing timely fulfillment of this procedure, violating technology. Because of the marked spread of root rots, black seed-buds and other diseases over winter wheat crops, special attention should be given to prompt seed chemical treatment with preparation TMTD, granozan, or hexatnūram in the recommended doses with addition (300 g per one ton seed) of fundazol which prevents the development of root rots in the fall-winter period.

For an increase in winter hardiness winter wheat should be sown during the first days of the optimal dates using seed which was worked with preparation TUR.

This year there is also the danger of grain weevil infestation, primarily on crops allocated after stubble predecessors. The most effective measure of combating this pest is to destroy windfall and weed sprouts (sources of food for larvae) on winter crop and adjacent fields. Experience of farms in Kherson, Dnepropetrovsk and Zaporozh'e Oblasts

showed that the number of weevils and other pests is considerably decreased following the application of ammonia water under the pre-sowing cultivation.

To combat wheat crop grain weevils the numbers of larvae must be carefully noted. With the presence of two-three larvae per square meter, crops must be immediately treated with volaton, gamma-isomer hexachlorane, bazudin or metaphos in recommended doses.

The above recommendations reflect basic measures for the preparation and conduct of winter crop sowing with consideration of this year's conditions. Their creative application will provide for the establishment of a strong basis for a high yield, and will promote the successful fulfillment of tasks set by the May (1982) CC CPSU Plenum and the June Plenum of the CC Ukrainian Communist Party.

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## MAJOR CROP PROGRESS AND WEATHER REPORTING

### COMMENTARY ON ONSET OF WINTER IN UKRAINE

Kiev SIL'S'KI VISTI in Ukrainian 1 Dec 82 p 4

[Article by M. Tsupenko, head of agrometeorology section, Ukrainian Republican Hydrometeorology and Natural Environment Control Administration: "When Snow Covers the Ground"]

[Text] This fall weather stayed unusually warm and mostly without prolonged rain. This resulted in slow winter crop vegetation and delayed completion of of late fall field work. Productive moisture reserves in the 0-20 cm soil layer under winter crops in specific areas of the republic's Steppe zone, and also in Chernovtsi, Vinnitsa and Cherkassy Oblasts as well as in light Polissya soils and in fall plowing fields did not go above 11-20 mm for a long time and in November. In some areas of Odessa, Zaporozh'e, Voroshilovgrad, Donetsk, Kharkov and Kherson Oblasts there were only 5-10 mm moisture.

On many fields in Bukovina and Volyn, as well as Kiev, Poltava, Kharkov and Cherkassy areas the soil meter layer contains only 70-110 mm of productive moisture. Quite a few areas in Odessa and Chernovtsi Oblasts and also some in Donetsk, Zaporozh'e, Kherson and Krym Oblasts contain 30-50 mm of productive moisture which is less than normal. Although the republic's soil water table compared to the average over many years may now be found closer to the soil surface between 30-80 cm, and in some areas 100-200 cm, field moisture accumulation in the winter-spring period should be given much more attention.

Observation over many years show that the amount of average monthly precipitation in the first winter month over most of Ukraine's territory reaches 25-50 mm, and 55 to 100 mm in southern Krym, Karpaty and Zakarpattya. A steady snow covering develops in most of the republic's rayons. This does not occur every year in outer southern oblasts, in Kherson, Nikolaev, Odessa and Krym areas. The people say: "If there is a lot of snow there will be a lot of grain." Considering the present farm technical equipment there exists a real possibility for an operative use of all measures towards snow accumulation in the fields.

With the arrival of December snow storms become more frequent, soil freezing increases not only because of the cold air from the Arctic but also as a result of the earth's radiation cooling. Long ago people called December "Gloomy" because in addition to everything else, the days are shortest and nights longest in this particular month.

According to calculations of specialists at the USSR Hydrometeorology Center this year December is expected to be cooler than normal. The average monthly air temperature in Volyn, Lvov, Ivano-Frankovsk, Chernovtsi, Ternopol, Khmel'nitskiy, Rovno, Zhitomir, Vinnitsa, Cherkassy, Kirovograd, Zaporozh'e and Nikolaev Oblasts will amount to 3-5 degrees frost. It will be 5-7 degrees in Kiev, Chernigov, Sumy, Kharkov, Poltava, Voroshilovgrad, Donetsk and Dnepropetrovsk; 0-2 degrees frost (below the norm) in Odessa, Kherson, Zakarpattya and Krym Oblasts. At night the minimal air temperature in Odessa, Nikolaev and Kherson Oblasts will drop to 8-12, in Krym to 5-10, and in southern Krym to 0-5 degrees frost.

A temperature drop is possible in other oblasts during the month of up to -15 to 20 degrees.

The monthly amount of precipitation in Volyn, Rovno, Zhitomir, Kiev, Chernigov, Sumy, Kharkov, Voroshilovgrad and Krym Oblasts will amount to 30-40 mm (close to the average). In Odessa, Nikolaev, Kherson, Zaporozh'e, Dnepropetrovsk, Donetsk, Poltava, Kirovograd, Cherkassy, Vinnitsa, Khmel'nitskiy, Chernovtsi, Ternopol, Ivano-Frankovsk and Lvov Oblasts 45-60 and in Zakarpattya up to 9 mm (above average).

Thus winter assumes its rights. Timely preparation for it, however, will prevent unpleasant surprises.

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## LIVESTOCK FEED PROCUREMENT

### CULTIVATION OF RAPE OILSEED PROMOTED FOR PROTEIN VALUE

Moscow SEL'SKAYA ZHIZN' in Russian 7 Dec 82 p 2

[Article by Nikolay Osychkin: "Oil and Protein"]

[Text] I recently acquired an unusual souvenir -- a bottle containing a clear brown liquid. The label read: "Rape oil with a high oleine content." A description was also provided of its remarkable food and taste qualities. The oil was truly a surprise for my housewife.

"As yet, only an experimental batch has been released," I was informed by the USSR Ministry of Agriculture, "But before very long rape oil will become a habitual product on our tables."

Rape, an annual plant of the cruciferae family, is considered to be one of the oldest on earth. Its homeland is western Europe. Swedish scientists believe that rape came about as a result of the crossing of cabbage and wild cabbage, with a subsequent doubling of the number of chromosomes in the first hybrid generation.

Rape appeared in our country in the early 19th Century. Its growing area has reached 300,000 hectares. But during one particular stage it did not thrive very well. The successes achieved in the selection and production of sunflowers and also the absence of means for combating rape pests and diseases brought about a sharp reduction in its sowings. In recent years, such sowings have been carried out on only 10,000 hectares for feed purposes.

At the present time, rape is returning to the fields. The achievements realized in plant breeding and in the use of chemical processes in farming have raised the prospects for this crop noticeably. Over the past decade, the sowing areas for rape have been expanded by 30 percent throughout the world and have reached 12 million hectares. During this period the production of its oil-bearing seed has increased from 6.6 to 11.8 million tons. In countries having a moderate or cold climate, such as Canada, the FRG, GDR, Polish People's Republic, Sweden and others, it is playing an important role with regard to supplying the populations with fats and balancing the livestock rations in terms of protein.

Why is rape valued so highly? Primarily because of its high oil content and feed qualities. The seed of modern varieties contain 40-45 percent oil. In terms of its taste and food qualities, it is on a par with sunflowers and is used for salad



purposes and also for the production of margarine, mixed fats, ice cream, chocolate and other products. The oil-seed meal contains 35-40 percent protein and is not inferior to soybean oil-seed meal in terms of its amino acid structure.

In discussing the economic effectiveness of rape cultivation, compared to other crops, the specialists cite the following data. For a rape seed cropping power of 20 quintals, the protein yield per hectare of sowing is 500 kilograms. In order to obtain an equivalent amount of protein from barley, a cropping power of 63 quintals per hectare is required. However, a ton of rape oil-seed meal makes it possible to balance 8 tons of mixed feed in terms of protein. Rape and wild cabbage are fine forage and honey-bearing plants. A kilogram of their fodder contains 0.16 feed units, 30 grams of protein and the honey harvest per hectare of sowing is 90 kilograms.

I believe that the reader understands why it is necessary to campaign for rape. Here we have in mind the fact that the leaders of kolkhozes, and sovkhoses, agronomists and zootechnicians are once again convinced regarding the tremendous value of this crop and that they will not be making a mistake by sowing rape in the same rows with wheat, barley, corn, sunflowers, alfalfa and other traditional crops. It should be understood that an expansion of the rape plantings should not be viewed as just a brief campaign, but rather it is a long-term task the solution for which is dependent to a definite degree on success being achieved in the production of goods.

This is precisely the aim of the USSR food program, one section of which contains the statement: "In the interest of increasing the plant oil resources, the cultivation of rape must be developed during the 11th Five-Year Plan in the western oblasts of the Ukraine, in Belorussia, the Baltic republics, in the central and central chernozem regions of the RSFSR, in the Volga region, the Urals, in Siberia and in the north Caucasus and in 1985 a gross yield of 0.5 million tons of rape seed must be obtained and in 1990 -- roughly 1.5 million tons."

There are many farms throughout the country which have attached the proper value to rape and which have made it a large source for obtaining vegetable oil and protein feed. In particular, the kolkhozes and sovkhoses in Ivano-Frankovsk Oblast, where I paid a visit, serve as a fine example of this. The special scientific-production program "Rape" was developed here. Based upon this program, certain farms were singled out for the production of high quality seed and elite and high reproductions for strain renovation and plant breeding work was organized. This year the crop was harvested from 20,000 hectares, including 4,000 hectares for seed purposes. Next year the sowings of the crop for oil and seed will reach 10,000 hectares.

The economic advantages to be realized from the cultivation of rape can be studied by analyzing the experience of the Kolkhoz imeni Lenin in Kolomyyskiy Rayon. This farm, which specializes in grain crops and animal husbandry operations, has 2,919 hectares of arable land at its disposal. In accordance with the crop structure, almost one half of this area is set aside for grain crops. Potatoes, vegetables, sugar beets and forage crops are grown here. In addition to other animals, 1,300 cows are maintained on the farms here. Each one of these cows produces 4,500 kilograms of milk. How is this done?

"Winter rape is of great assistance" stated the chairman of the kolkhoz, Vasiliy Nikolayevich Popadyuk, "We set aside 250 hectares for it. It provides us with oil-bearing seed and with very early fodder. In the spring we cut the tracts down two weeks earlier than winter rye and we then have enough green feed right up until late autumn."

On the face of it, this very common agricultural practice provides the Kolkhoz imeni Lenin with an annual yield of 25-30 quintals of rape seed per hectare and 450-500 quintals of fodder. These are truly herculean yields!

Some farms in other zones of the country are obtaining outstanding results. This year a number of kolkhozes and sovkhoses in Vinnitsa, Minsk and Lipetsk Oblasts and in Stavropol' Kray obtained 20-25 quintals of seed per hectare. In Moscow Oblast, a fine yield was obtained by the Borets Kolkhoz. High yields of spring rape were obtained on experimental fields in Omsk Oblast. The Birilyusskiy and Sukhobuzimskiy state strain testing stations in Krasnoyar Kray obtained 600-700 quintals of green fodder per hectare. No other crop here furnished such a large quantity of protein feed per hectare.

Even this brief list of farms, rayons and oblasts underscores the broad area in which rape is grown. Many reports are being received on the testing of new varieties of domestic and foreign breeding and on the working out of technologies which conform to local conditions. This year the oil-bearing seed in the country was harvested from the first 78,000 hectares. The yields varied greatly. Some collectives, as mentioned above, obtained yields of 25-30 quintals per hectare and others -- 6-7. In many instances a lack of experience, various difficulties and unfinished work took their toll. But it was gratifying to note that some progress was realized. At the present time, sufficient seed has been placed in storage on the farms and in the state resources for 3 million hectares.

It is believed that a thorough study should be undertaken in all areas of the experience already accumulated, lessons should be drawn from the shortcomings noted and every attempt should be made to carry out the practical implementation of the tasks for developing oil-seed production as outlined in the food program. Recently the USSR Ministry of Agriculture discussed a complex of measures aimed at expanding the rape areas during 1983 and in subsequent years and increasing the yields and output of oil. At this point the local organs, kolkhozes and sovkhoses must undertake measures aimed at solving the problem.

What are the principal conditions for the successful implementation of the special purpose all-round "Rape" program, as it is presently being referred to? It includes locating the sowings in the most favorable zones; achieving radical improvements in plant breeding and in converting seed production over to an industrial basis; the mass utilization of industrial technologies involving the use of complete dosages of fertilizers, highly effective herbicides and means for protecting plants and equipment.

In working along these lines, it should be borne in mind that rape consumes large quantities of moisture and nutrients. But at the same time it creates favorable agrotechnical conditions for subsequent crops in a crop rotation plan. Its plants leave 40-60 quintals of root residue for each hectare of planting and this is 6-7

times more than that for winter wheat and one and a half to two times more than clover. The nutrient content in the root residue is equivalent to 15 tons of farmyard manure. The same amounts are to be found in the straw and post-harvest residues. The cultivation of rape can ensure the carrying out of farming operations in the face of a shortage of humus.

The interests of carrying out the special purpose program require the organization of plant breeding and seed production for the crop on a modern basis. The scientific research institute and the plant breeding centers, during this current five-year plan, are being confronted with the task of creating a low-glucosin variety of winter rape having a seed cropping power of 30-35 quintals per hectare and spring rape -- with a cropping power of 22-27 quintals and an oil percentage of 42-45 percent, with a raised protein content and a reduced amount of the undesirable linoleic acid.

At the present time, 11 domestic varieties have already been regionalized. Among them are the first non-erucic types -- the winter Krasnodarskiy-3 and Snitinskiy and the spring Kubanskiy, Agat and Mar'yanovski varieties. Promising foreign varieties have been imported and reproduced: Kvinta, Garant (FRG), Salyut, Ol'ga (Sweden) and Span, Kendl and Torch (Canada). Fifty five of our own and foreign varieties are presently undergoing testing. The plant breeding and seed production work must ensure fulfillment of the tasks for producing elite seed and the delivery to state resources of only non-erucic and low-glucosin variety seed.

Perhaps one of the most complicated problems of rape production is that of the complete mechanization of the processes employed in cultivating it. This crop imposes high requirements with regard to the leveling off of the soil, uniform and shallow placement of the seed and harvesting and protecting the crop. During this present stage, use can be made of existing equipment. However, the introduction of an industrial technology assumes the equipping of the farms with new and modern soil cultivation machines, pneumatic-mechanical precision drills, special attachments for the combines and other equipment.

The farms require machines for the uniform applications of fertilizers and herbicides and for cleaning the seed. The M-819 dryers and the OBV-160 forced ventilation hoppers have proven their worth. The availability of such units will make it possible to guarantee proper preservation of the seed. For the construction of ground type dryers, the rape growing farms must be supplied with metal screens having 1 millimeter cells and air heaters. The recommendation has been made to have the union organs issue mineral fertilizers for the cultivation of rape, on a special purpose basis and at the rate of 1 ton per hectare of sowing.

It is completely obvious that the mentioned problems are problems of growth and that they will be resolved. The kolkhozes and sovkhoses are capable of rapidly increasing the yields and gross harvests of rape seed. But what should be done with it and how should it be employed for the production of oil and oil-seed meal? For the time being the processing of the seed will be carried out by enterprises of Minpishcheprom [Ministry of the Food Industry], mainly on a customer-supplied basis with all of the oil-seed meal being returned. This is correct from the standpoint of developing economic initiative. How is it possible to attract more

oil into the state resources? Where will those kolkhozes and sovkhoses which are located at some distance from the oil mill plants market their seed?

It is obvious that success will not be achieved in the absence of a planned approach being employed for developing the branch or consideration being given to the final result. The development of the processing base must proceed in keeping with the production of raw materials. In a number of areas the plans call for the construction of inter-farm plants and departments. Such enterprises exist in Ivano-Frankovsk and Omsk Oblasts. The development of standard plans must be accelerated, with use being made of both domestic and foreign experience. In particular, great interest is being displayed in small extruder type units having a capability for processing 1.5-3 tons of oil-bearing seed daily. Tests carried out in Lipetsk and Omsk Oblasts have revealed the obvious advantages offered by these units. The processing of the rape is being carried out directly on the farms. The oil is shipped to the state and the fresh oil-seed meal remains at the site and is used as a protein additive.

The government of the USSR has adopted a number of economic measures aimed at raising the material interest of the farms in the production of rape. The procurement prices for the oil-bearing seed have been raised from 170 to 300 rubles per ton, with a 30 percent bonus being paid for non-erucic and low-glucosin varieties; the procurement bonuses for seed of promising varieties have increased noticeably. Counter sales of cake (oil-seed meal) to the farms have been established at the rate of 20 kilograms for each quintal of rape and wild cabbage seed sold to the state. The counter sale of mixed feed in the amount of 3 quintals per quintal of high quality rape and wild cabbage seed sold to the state resources is also being organized.

At the same time, the specialists consider it advisable to place the payments for harvesting rape on the same footing with payments for harvesting grain crops and sunflowers, that is, to double such payments. The proposal has been made to introduce a system of bonuses for issuing to farm leaders and specialists and workers at the rayon and oblast levels for having achieved high indicators.

Rape possesses great potential for solving the problems of vegetable oil and protein. The full utilization of this potential will be tantamount to making a worthy contribution towards solving the food problem of the USSR.

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## LIVESTOCK

### UTILIZATION OF CAPITAL INVESTMENT IN RSFSR DAIRY INDUSTRY

Moscow MOLOCHNAYA PROMYSHLENNOST' in Russian No 10, Oct 82 pp 44-46

[Article by V.N. Kiselev, RSFSR Gosplan: "Raising the Effectiveness of Use of Capital Investments in the Dairy Industry"]

[Text] The CPSU Central Committee and the USSR Council of Ministers, in a decree dated 12 July 1979 and entitled "Improvements in Planning and Intensifying the Effect of the Economic Mechanism With Regard To Raising Production Efficiency and the Quality of Work," obligated Gosplan, the ministries and departments of the USSR and the union republic councils of ministers to develop and implement measures aimed at raising the effectiveness of capital investments, accelerating the placing in operation of production capabilities at installations and construction projects started earlier and sharply reducing the number of new construction starts, such that the volume of unfinished construction work will be brought to the established norms during the next few years.

The decisions handed down during the 26th CPSU Congress in the area of capital construction are directed towards achieving this goal.

During the years of the 10th Five-Year Plan, the volume of unfinished construction work for the RSFSR Minmyasomolprom [Ministry of the Meat and Dairy Industry] increased by 54.7 million rubles and by 1 January 1981 amounted to 102 percent of the annual capital investment limit, compared to a norm of 71.4 percent.

In order to raise the effectiveness of use of capital investments, measures were undertaken during the formation of the plan for the 11th Five-Year Plan aimed at concentrating them on the most important projects. The plans called for 30.7 percent of the resources allocated for production construction, including 33.2 percent for the dairy industry, to be used for the modernization and technical re-equipping of existing enterprises.

The results for 1981 reveal that the RSFSR Minmyasomolprom, jointly with the construction and completion organizations, carried out a definite amount of work directed towards raising the effectiveness of use of capital investments and accelerating the placing in operation of production capabilities, installations and fixed capital. During the year the ministry's volume of unfinished construction decreased on the whole by 44.5 million rubles, or 10.8 percent, including 26.7 million rubles or 14.9 percent for Rosmolprom. As a result of the construction of

new and the modernization of existing enterprises, capabilities were placed in operation in the Russian Federation for the production during a shift of 1,108 tons of whole milk products, 8.7 tons of cheese, 29.5 tons of dry skim milk and ZTsM [dry milk substitute].

Approximately 30 enterprises and departments were built and modernized, including municipal dairy plants in Arkhangelsk, Lipetsk, Dzerzhinsk in Gorkiy Oblast and Kazan; dry skim milk and ZTsM plants in the cities of Sudzha in Kursk Oblast, Millerovo in Rostov Oblast, Tatarovka in Novosibirsk Oblast and a number of others.

The construction of some enterprises of the dairy industry was carried out during the normative periods. This applies to the municipal dairy plant in Murmansk, which has a capability of 100 tons of milk per shift and a freezer for the one-time storage of 500 tons and which was placed in operation in 1980 following the start of construction in 1978; a plant in the city of Kuybyshev, which has a shift capability of 360 tons of milk and which was built in just 4 years; the Kazan plant, the modernization of which together with an increase in the shift capability of 155 tons, was carried out in 3 years and a number of others.

At the same time, the construction of some enterprises is being dragged out and the normative periods are being exceeded. For example, a plant for dry skim milk in the city of Ostrov in Pskov Oblast (a contractual organization of RSFSR Minsel'stroy [Ministry of Rural Construction] has been under construction since 1975 and instead of 1981 its introduction into operation has been postponed until 1982. Since 1976, RSFSR Minsel'stroy has been engaged in the construction of a dry skim milk plant in the city of Shchigry in Kursk Oblast.

As a result and notwithstanding the reduction achieved in 1981 in the volume of unfinished construction, the amount of such construction for Rosmolprom at the end of 1981 amounted to approximately 80 percent of the annual volume of state capital investments and for non-centralized investments -- more than 20 million rubles.

An analysis of the title lists of the dairy industry reveals that approximately 50 percent of the volume of unfinished construction is accounted for by carry-over construction projects the estimated cost of which is more than 3 million rubles, more than 15 percent -- a cost lower than 3 million rubles and more than 10 percent -- for projects which are being built by means of non-centralized sources of financing.

The principal reason for the slow reduction in the volumes of unfinished construction is non-fulfillment of the task for the placing in operation of production capabilities, installations and fixed capital. In accordance with the plan for 1981, 137.8 million rubles worth of fixed capital should have been placed in operation at carry-over construction projects of the dairy industry instead of only 107.2 million rubles worth. Dry skim milk plants were not placed in operation in the cities of Ostrov in Pskov Oblast and Shchigry in Kursk Oblast and cheese-making plants in Sarmakova in the Kabardino-Balkar ASSR and Babayurta in the Dagestan ASSR. In the case of these four installations alone, 24 million rubles worth of fixed capital were not placed in operation.

In 1982, 23 installations must be placed in operation in the dairy industry of the RSFSR Minmyasomolprom and the plans call for 219 million rubles worth of fixed capital to be placed in operation. In particular, construction work must be completed on municipal dairy plants having shift capabilities of more than 100 tons in the cities of Kaluga, Orel and Ramenskoye in Moscow Oblast and Shakhty in Rostov Oblast and also on dry skim milk plants which were not placed in operation in 1981.

All of the underway construction projects should be supplied in a timely manner with the necessary equipment, cable products, locking hardware and other materials, the construction organizations should be provided with assistance in the form of cadres of workers, transport vehicles and so forth.

The structure of unfinished construction operations, in terms of projects of non-centralized sources of financing, should be thoroughly examined in the interest of placing in operation all of the carry-over projects in 1983.

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## LIVESTOCK

### TASKS FOR IMPROVING BELORUSSIAN LIVESTOCK PRODUCTIVITY

Minsk SEL'SKAYA GAZETA in Russian 10 Nov 82 p 1

/Article: "Urgent Tasks of Livestock Breeders"/

/Text/ The republic's livestock breeders, like all rural workers, actively work on the fulfillment of the decisions of the May (1982) Plenum of the CPSU Central Committee and strive to make a weighty contribution to the realization of the country's food program. On kolkhozes and sovkhozes during the past period the production of milk increased by 6 percent, of meat, by 8 percent and of eggs, by 4 percent. A total of 288,000 tons of milk, 56,000 tons of livestock and poultry and 38.8 million eggs more were sold to the state. The productivity of all types of livestock increased markedly and their population rose.

Now, at the end of the year, it is important not only to preserve, but to increase the rates of production and procurement of livestock products. A great deal depends on a good organization of the winter stabling of animals. The prerequisites for this exist. More hay, haylage, on the whole, coarse fodder and corn silage were procured on the republic's farms than last year. On the overwhelming majority of kolkhozes and sovkhozes by the end of the pasture season the milch herd had better fatness than during previous years and a normal physiological state.

At the same time, current wintering will not be easy. Its complication lies in the fact that kolkhozes and sovkhozes must increase the volumes of production of livestock products with smaller reserves of fodder potatoes, grain and fodder root crops than planned. The existing feed structure is more favorable for the production of milk and beef and, at the same time, extremely complicates the situation in hog breeding.

In such a situation a careful distribution of fodder reserves among types and technological groups of livestock and their preparation for feeding are some of the indispensable conditions ensuring successful wintering and an increase in the productivity of public animal husbandry. The experience of the Kolkhoz imeni Zheleznyakovich in Korelichskiy Rayon and of the Kolkhoz imeni Kirov in Shklovskiy Rayon is worthy of imitation. Wintering has begun there in an organized way, feed shops have been put into operation promptly, the established regime is fulfilled efficiently, irregularities in the feeding of animals are not permitted and production technology is strictly observed at sections. The initiative of these farms for a significant increase in output during the stabling period was approved by the Central Committee of the Communist Party of Belorussia.



This is how affairs are managed on most farms in Gomelskiy, Rogachevskiy, Korelichskiy, Mogilevskiy and other rayons, where the productivity of cows and gross milk production rose significantly in October. However, in a number of rayons livestock has not been promptly transferred to the winter regime of feeding and keeping, feed preparation equipment has not been put into operation and not everything has been done to prepare livestock barns and to create normal working conditions for livestock breeders. Kolkhozes and sovkhozes in Slutskiy, Uzdenskiy, Pukhovichskiy, Dzerzhinskiy, Volozhinskiy, Borisovskiy, Lyubanskiy, Gluskiy, Smorgonskiy, Svetlogorskiy, Ushachskiy, Beshenkovichskiy, Brestskiy, Zhabinkovskiy and other rayons have begun wintering with great losses.

On the Progress Kolkhoz in Zhlobinskiy Rayon a feed shop has not yet been put into operation, the milch herd is fed below existing possibilities and, as a consequence, daily milk yields per cow total only 3.4 kg, or 0.4 kg less than last year. On the Naroch' Sovkhoz in Myadelskiy Rayon to this day there is no monthly feed utilization plan, winter rations have not been prepared and the quality of feed has not been checked. Fodder reserves make it possible to allocate nine fodder units per cow in 24 hours. In fact, however, less than six are distributed. Coarse fodder has been completely eliminated from the ration on the pretext that animals obtain it on pastures.

The managers and specialists of a number of farms and agricultural bodies are not aware of the utmost acuteness of the situation created in animal husbandry and tolerate cases of mismanagement. They substitute talks about difficulties for a high level of organization and a business-like approach to the solution of problems. The slightest delay or weakening in the intensity of work and the lack of adoption of specific and prompt measures can do serious damage to animal husbandry and, especially, to hog breeding. In connection with this every farm must develop measures that would contribute to an overall solution of all problems connected with the wintering of livestock.

A fundamental improvement in the work of farm managers and specialists with livestock breeding personnel should become the primary and chief measure in an increase in the efficiency of the winter stabling period. Successful wintering will depend on this. Now it is very important to assign the necessary number of people for work at sections and to teach them to introduce the achievements of science and advanced experience into production. In the next few days it is necessary to hold meetings of livestock breeders at every section and complex, to examine in detail problems connected with the course of livestock wintering at them, to map out reliable ways of growth of output and to determine stepped-up, but realistic, assignments for every subdivision and worker.

In this work socialist competition and an increase in its efficiency and publicity should be put in the forefront. It is very important to effectively develop the conditions of labor competition and measures of moral and financial incentives for winners. When awarding bonuses to workers servicing large-horned cattle and hogs in raising and fattening, it is necessary to pay 2 percent of the monthly earnings per percent of overfulfillment of the monthly plan and, when milk yield assignments are overfulfilled, 1 percent of the wages per above-plan percent. It is necessary to establish a procedure under which the results of work at sections are reviewed daily and examined weekly by sovkhoz managements and kolkhoz boards.

Rations for the feeding of livestock ensuring a planned yield of products must be immediately revised and approved at every section. It is necessary to urgently put all feed shops and areas into operation, to ensure the preparation of full-ration feed mixtures with the use of mineral, vitamin and other additives and to have a strictly differentiated approach to the feeding of animals, especially with concentrated and milk producing feed. On all kolkhozes and sovkhozes it is necessary to separate dry cows into individual groups and to ensure their feeding with quality hay according to full zootechnical norms. It is necessary to reserve for the entire stabling period the highest quality hay for the feeding of calves and for the preparation of hay meal and to widely practice the preparation of milk substitutes, infusions, broths, traditional swills for calves and coniferous paste and meal directly at sections.

Taking the big proportion of straw in the feed balance into consideration, an increase in the efficiency of its utilization acquires special significance. In this connection it is necessary to apply all available methods and means of its processing--physical, thermochemical, microbiological and others. The specialized departments of the Scientific Production Association for Agrochemical Services to Agriculture should continue their work on the processing of straw with anhydrous ammonia and ensure an unconditional fulfillment of the established assignments.

The situation requires the most serious attention to problems connected with the search for additional potentials for hog feeding. Existing mixed feed resources must be assigned to this sector, primarily to large hog breeding farms. Furthermore, mixed silage, fodder root crops, hay meal and paste from haylage, silage and coniferous needles should be widely used in feed. Food waste, meat and dairy industry waste and malt residues must become a serious support.

If necessary, the advisability for the transfer of hog stock to farms more provided with feed, as well as for the sale of fattening stock of lower weight standards, must be examined in each specific case. This will make it possible to prevent a reduction in productivity and to utilize feed more efficiently.

The shortage of feed requires the most careful observance of veterinary-sanitary conditions at sections. An absence of delivery sections and preventive clinics for calves and a violation of their operating regime must be considered mismanagement and the strictest measures must be taken in these cases.

It is necessary to place the most serious responsibility on the managers and specialists of the farms where livestock barns are not yet fully prepared for winter and where a zooveterinary inspection and regrouping of livestock have not been carried out. Specific measures to inseminate breeding stock in order to obtain the maximum possible number of offspring for the next summer season and to improve the preservation of young stock should be taken everywhere.

Engineering services of agricultural bodies jointly with the Belorussian SSR State Committee for Supply of Production Equipment for Agriculture and the Belorussian Main Production Administration of Power and Electrification must take all the necessary measures to ensure the continuous operation of power and water supply, ventilation, sewage and manure removal systems, milking installations and feed preparation equipment.

Kolkhoz boards and sovkhos managements must engage in explanatory work with the population on the importance of and the need for the sale of surplus milk and livestock to the state and provide the necessary help with feed and with the supply of young hogs and poultry to the private farms of rural residents.

On every kolkhoz and sovkhos all organizational-technological work should be directed toward an increase in the production of milk and meat during the stabling period, an unconditional fulfillment of the current year's plans and the creation of the necessary reserve for the fulfillment of the plans and socialist obligations of next year and the five-year plan as a whole.

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## LIVESTOCK

UDC 636.082(476)

### INCREASING BREEDING POTENTIAL OF BELORUSSIAN LIVESTOCK

Moscow ZHIVOTNOVODSTVO in Russian No 11, Nov 82 pp 8-9

[Article by V.S. Antonyuk, director of the Plemtsentr Scientific Production Association, I.N. Nikitchenko, deputy director for science and an instructor at the breeding center and V.M. Nikitenko, deputy director for production and director of the republic's trust of breeding plants: "Raising the Effectiveness of Breeding Work in Pedigree Animal Husbandry in Belorussia"]

[Text] A great amount of work has been carried out in the Belorussian SSR in connection with the development of pedigree animal husbandry and raising the effectiveness of breeding for the purpose of achieving further growth in the genetic potential productivity of the agricultural animals. As a result, considerable improvements have been realized in the pedigree status of the animals, an extensive network of breeding farms has been created which should satisfy the requirements for pure-bred and hybrid replacement young stock, a breeding service has been formed and favorable prerequisites have been created for efficient breeding work and for intensifying scientific studies. An important element of the breeding service is the Plemtsentr Central Scientific Production Association for the Breeding of Agricultural Animals, organized in 1975. Its structure includes a breeding center of the Belorussian NIIZh [Scientific Research Institute of Animal Husbandry] (leading enterprise) and the republic trust of breeding plants, which consists of 25 farms. All organizations included in the structure of the association retain their economic independence.

The principal tasks of the Plemtsentr are: improving existing strains and breeding new and highly productive strains, types, lines, families and inter-strain and inter-line hybrids of agricultural animals that meet the requirements of industrial technologies for the production of animal husbandry products; the development of new and improvements in existing methods for the selection and breeding of agricultural animals, artificial insemination, storing the sperm of bulls and raising the fertility and effectiveness of reproduction of agricultural animals; solving the problems of applied genetics; improving the methods for expert analysis of the parentage of animals; developing methods for the raising of young stock and the feeding and maintenance of pedigree livestock of new strains, types and lines; preparations for the publication of state breeding books, catalogs of information materials and other literature; the introduction and publicizing of the latest

achievements of domestic and international pedigree animal husbandry; coordination and methodological direction for scientific studies on pedigree animal husbandry in the republic.

The work carried out by the association's scientific and production subunits in connection with fulfilling the chief tasks is based upon planning tasks which call for output by stages in accordance with specific productivity indicators for the animals.

With the creation of the scientific-production association, the administration of the breeding process improved, the operational efficiency of the scientists increased and the link between science and production became stronger. The scientists and specialists of the breeding service developed and the BSSR MSKh [Ministry of Agriculture] approved a system for carrying out breeding work in cattle husbandry, hog breeding and sheep raising that is aimed at raising the average genetic potential productivity of the animals (milk yield of 4,000 kg of milk; average daily increase in weight of young large-horned cattle stock during fattening of 1,000 grams, hogs -- 800 grams or more, with feed expenditures of 3.5 feed units or less, mutton production per ewe 80 kg and clipping of wool -- 5.5-6 kg). As a result of purposeful breeding work and organizational and technological measures, a plant line of black-variegated cattle was bred (milk yield on the average equal to 5,000 kg of milk, fat content 3.8 percent) and 20 families (milk yield of 8,000 kg of milk, fat content 3.7-4.2 percent). The number of animals of new lines and families on the republic's farms is in excess of 250,000 head.

At the present time, four more lines of the black-variegated cattle (Bertusa, Banga, Reydera, Medkhustera and Antona) are being prepared for approval. The productivity of the cows equals 5,500 kg, milk fat content -- 3.8-3.9 percent and protein content -- 3.2-3.3 percent. A special group has been created on the breeding farms; it numbers more than 1,200 cows having milk yields of 6,200 kg and a fat content of 3.78 percent.

Extensive use is being made in production of hogs of the large white and Belorussian black-variegated strains of new intra-strain types. During all-union testing, the animals recorded an average daily weight increase during fattening of 751 and 748 grams respectively, with a feed consumption of 3.9 feed units per kg of weight increase. The proportion of pure-bred hogs was raised to 60 percent and this made it possible to introduce into production operations a system of breeding work based upon triple-strain crossings and strain-line hybridization. In 1981, industrial crossings were introduced at 85 percent of the kolkhozes and sovkhoses and the farms sold 67.2 percent of their hybrid hogs from their overall stock. Compared to 1973, the yield of offspring per principal sow increased by 6.6 percent (the system was introduced in 1973) and the average daily weight increase in the young stock during fattening -- 5.7 percent.

Work is nearing completion on the breeding of highly productive specialized lines of hogs on a pure-bred and multiple strain basis. The planned indicators for productivity (for almost all characteristics) have already been achieved for three lines. The polycarpic effect for sows of the 5th and 6th generations is 10.5-11.8 young pigs, the lactescence -- 53-55 kg and the weight of the nest during weaning -- up to 197 kg. Under the conditions prevailing at the Zhodino Control-Testing

Station, the young stock of these lines achieve a live weight of 100 kg in 170-186 days, with an average daily weight increase of 718-760 grams and a feed consumption of 3.4-3.6 feed units per kg of weight increase. The animals are distinguished by fine meat-fat qualities (meat yield of 62 percent).

In the case of individual fattening at the station for the testing of strains and lines for combination capability, the best animals achieve a live weight of 100 kg in 146 days, with an average daily weight increase of 1,232 grams and a feed consumption of 3.2 feed units per kg of weight increase. The number of animals representing new lines fluctuates from 500 to 2,000 head, including 180-600 principal sows.

At a hog farm of the Zarech'ye Breeding Plant, a control-testing station and a complex of the Sovkhoz-Combine imeni 60-Letiya BSSR, tests were carried out on hogs of the Belorussian large white type and the Belorussian black-variegated strains of recent generations, in crossings with boars of the Estonian bacon strain and also specialized meat lines. The heterosis effect in the case of strain-line hybridization, under the conditions found at a conventional farm, amounted to 3-12 percent and at a complex -- 2.8-5.4 percent. In the first instance the hybrid young stock had an average daily weight increase of 745-750 grams, with a feed consumption of 3.54-3.57 feed units per kg of weight increase and in the second -- 659 grams. Based upon these tests, a more effective variant for strain-line hybridization was proposed (hybrid sows of the BKB [Belorussian large white] X BChP [Belorussian black variegated], boars of the 5th and 3d lines).

At the Nosovichi Breeding Plant, the Pogor'ye Breeding Farm and the Budagovo OPKh, approval has been given for sheep of the new plant type Prekos strain (the ewe herd numbers 2,600 head), which has an average clipping of wool in credited weight of 6.3 kg, with 40 kg of meat being obtained per ewe.

The planned indicators have been achieved in horse breeding. A select group (114 stallions and 650 mares) has been bred and approval has been given for six lines and six families of Belorussian draught horses. The mares of the Belorussian draught group are distinguished by a high milk productivity (1,400-2,800 liters of milk during 6 months of lactation). The koumiss is characterized by high quality. The daily increase in weight in the horses during fattening is 800-1,200 grams.

Scientific studies have been carried out in connection with the development of new methods for breeding, immuno-genetics, reproduction, the use of an EVM [electronic computer] in the Zhivotnovodstvo ASU [automatic control system] and others.

As a result of reorganization and the operational introduction into operations of modern breeding achievements, substantial improvements have been realized in the production of the principal output at farms subordinated to the Plemtsentr NPO [Scientific Production Association], with improvements being noted in the quality of this output. In 1981 the breeding plants supplied the republic's kolkhozes and sovkhozes with 4,500 head of young large-horned cattle stock and 32,300 hogs; this exceeded the level for 1974 by a factor of 2.2 and 27 percent respectively. The proportion of high grade young stock, compared to the overall number of animals intended for sale, amounted to 92 and 94 percent.

A breeding center with scientific laboratories (development of new methods for breeding and the creation of new lines; computer-analysis studies; immuno-genetics,

ecological genetics; breeding of dairy and beef cattle and hogs, horses, sheep, biology of the propagation of agricultural animals; reproduction and artificial insemination) and a logistical base has been created in the republic. In 1976, a testing station for 450 rams with an experimental farm (for 1,000 ewes) was placed in operation, in 1980 -- a station for testing hog strains and lines for combination capability (570 sows with an annual sales of 11,800 hogs) and in 1981 an old facility at a station for evaluating beef strains of bulls in terms of their own productivity (for 210 head) was modernized. A station for evaluating dairy strains of bulls in terms of their meat productivity (for 420 billets) was prepared for operation. All of the stations are operating on the basis of a technology which conforms fully to the requirements of the breeding methods. In 1980, an experimental-production farm was organized based upon the mentioned stations, the Zhodino Control-Testing Station and the Budagovo Breeding Plant. In addition to creating highly productive animals, this experimental-production farm will supply the breeding network with high quality young stock and raise bulls having a guaranteed productivity for the republic's specialized farms.

At the same time, as borne out by experience, the work being carried out by the association and its subunits is fraught with a number of shortcomings which are lowering the effectiveness of breeding work in animal husbandry and restraining the rates for realizing breeding improvements in the animals. Chief among these shortcomings are an inadequate capital-supply ratio and overloading of the plans for producing marketable field crop husbandry products. This is holding back the creation at the breeding plants of the conditions required for full-value feeding and maintenance of the animals and it is precluding the possibility of fully realizing their genetic potential productivity.

In addition, material incentives for scientific workers and farm specialists for having accelerated scientific studies and for introducing modern achievements into production, are still not being employed. The logistical base for the breeding center is not being developed at an adequate tempo and this precludes the possibility of accelerating quality improvements in the dairy herd, ensuring that the bulls are checked for the quality of their offspring or organizing proper instruction for the specialists in the new means and methods for managing the branch.

The elimination of the mentioned shortcomings will accelerate considerably the fulfillment of those breeding programs which call for the completion of work aimed at breeding black-variegated cows of the Belorussian type, having a milk yield of 5,000 kg or more, a fat content of 3.8 percent and a protein content of 3.3 percent; the creation of three specialized lines and four intra-strain types of hogs, which are characterized by a good polycarpic effect (11-12 young pigs), which achieve a live weight of 100 kg at the age of 175-180 days and which consume 3.6 feed units (meat yield 60 percent) per kg of weight increase; obtaining sheep of the Prekos strain of a highly productive intra-strain type and a new strain of horses. The achievement of the planned goals for creating intensive strains and lines and their rapid dissemination to the republic's kolkhozes and sovkhoses will constitute a practical contribution by the Belorussian breeders -- scientists and production workers -- towards fulfilling the country's food program, adopted during the May (1982) Plenum of the CPSU Central Committee.

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## STRENGTHENING FEED BASE OF PIG FARMING IN KHARKOV OBLAST

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[Article by B. Kuz'min, candidate of agricultural sciences; G. Belyanskiy, Khar'kov Division of the Ukrainian Scientific Research Institute of Economics and Agricultural Organization imeni A. G. Shlikhter: "Strengthening the Feed Base"]

[Text] In the size of its enterprises and the intensity of development of pig farming Khar'kov Oblast occupies a leading place in the Ukraine. Here branch specialization is realized through the creation of large hog complexes in kolkhozes and sovkhozes, of state hog-raising factories of the industrial type and of interfarm enterprises and associations for the production of pork. As a result of the ever-increasing demand for meat even the small pig farms of multi-branch enterprises become important.

As a result of increased specialization and concentration within the branch, pork production in the oblast increased from 28.5 quintals per 100 hectares of plowland in 1968 to 37.2 quintals in 1980, or by 30.5 percent.

In the Khar'kov area a large industrial complex imeni 60-Letiya Oktyabrya has been put into operation and it is to fatten 108,000 hogs annually. The indicators for the operations of the complex in 1981 are the same as those for the best enterprises in the country--expenditures per 1 quintal of growth comprised 2.94 man-hours, feed--4.71 quintals of feed units, and the cost of 1 quintal of growth was about 96 rubles.

However, within the total meat balance of the oblast the proportion of products coming from the Complex imeni 60-Letiya Oktyabrya is only 17.6 percent. The largest volume of pork production (52.6 percent) can be attributed to specialized pig-raising enterprises--20 kolkhozes, 11 sovkhozes and seven interfarm enterprises. There are 1-2 of these in every rayon. The effectiveness of pig farming in various types of specialized enterprises is presented in Table 1.

On the average specialized kolkhozes have 28.4 percent more agricultural lands and 33.6 percent more plowland than other kolkhozes. Twelve times more hogs are maintained here, 912 tons of meat per specialized enterprise are produced here, or 151.4 quintals per 100 hectares of plowland. Hog-raising sovkhozes have only 1.4 times more land than other sovkhozes but they maintain 9 times more hogs and produce and sell 10 times more pork.



Table 1

Indicators	Specialized pig raising			Remainder		Total in oblast
	Kolkhozes	Sovkhozes	Inter-Complex farm imeni 60-enter-Letiya prizes Oktyabrya	Kolkhozes	Sovkhozes	
Number of enterprises	20	11	6	1	251	416
Pork produced (tons)	18,240	6,303	9,660	11,436	12,299	65,050
Proportion in oblast						
pork production (%)	28	9.7	14.9	17.6	18.9	10.9
Proportion of pig farming in structure of commodity production (%)	40	35.8	100	100	3.9	5.1
Average annual pig herd (thousands of heads)	12.5	8.1	18.6	70.1	1.07	0.9
including female mothers	637	368	728	5,560	84	53
Pork production (tons)	912	573	1,610	11,436	49	56
Pork sold (tons)	854	537	1,660	11,160	48.9	51
Expenditures for the production of an increase of 1 quintal:						
man-hours	22.4	16.2	10.6	2.65	61.1	26.9
feed units	8.74	9.91	6.70	5.05	12.30	13.70
Cost of 1 quintal of increase (rubles)	122.41	120.53	108.28	93.89	168.54	145.27
Profitability of branch (%)	17.3	16.3	21.2	42.1	-5.8	-1.1
						9.0

The organization of large pig-raising enterprises enabled us to raise the level of mechanization of production processes, to introduce an improved technology of feeding and maintaining animals and as a result there was an improvement in the management of the branch.

A comparative economic evaluation of pork production in enterprises of various types convincingly demonstrates the advantage of producing pork in special enterprises.

The concentration of the herd of pigs enabled us to increase labor productivity; for the production of 1 quintal of pork specialized kolkhozes spend 22.4 man-hours whereas sovkhoses spend up to 16.2 man-hours, which is 1.6-2.7 times less than on the pig farms of regular enterprises. A higher level of production concentration and specialization in interfarm enterprises facilitated an even more effective management of pig farming--here labor expenditures are 1.5-2 times smaller than in specialized enterprises.

The cost of pork production in specialized kolkhoz enterprises is 37 percent lower and feed expenditures are 1.4 times smaller; in specialized sovkhoses enterprises as compared to other sovkhoses the difference between similar indicators comprised 27.9 percent and 1.3 times respectively.

Nevertheless on the whole the cost of pork in the oblast still remains high and profitability remains low. The production of meat on pig farms of non-specialized enterprises, the proportion of which reaches 30 percent in the oblast, is unprofitable and labor productivity in pig farming is very low.

In order to determine the reasons for the high cost of meat and its sharp fluctuation let us examine expenditures according to specific factors per unit of production in all categories of enterprises in the oblast (Table 2).

An analysis of the data indicates that within the cost structure of pork 63-77 percent of all expenditures go to wages and feed payments.

Whereas fluctuations in wages can be explained by various degrees of mechanization of labor-consuming processes related to the care and maintenance of hogs, the cost of feed is affected by quality and protein content.

At the present time the inadequate feeding level is one of the main reasons for the lag in the growth of economic effectiveness of pork production in specialized as well as multi-branched kolkhozes and sovkhoses. In most specialized enterprises the average sow and piglets receive 125-130 quintals of feed units with a protein content of 85-90 grams per feed unit. In the remainder of specialized enterprises and most multi-branched enterprises 80-85 quintals of feed units are expended per sow. Meanwhile, as the analysis shows, the level and full value of feeding in pig farming has a decisive effect on the effectiveness of managing the branch as a whole.

The calculations made for specialized kolkhozes of Khar'kov Oblast for the 11th Five-Year Plan show that the feeding level per sow must be increased to 135-140 quintals of feed units. This will enable us to more intensively

Table 2

Indicators	Specialized				Remainder		
	Kolkhozes	Sovkhozes	Interfarm Enterprises	Complex imeni 60-Letiya Oktyabrya	Kolkhozes	Sovkhozes	
Wages: rubles	18.37	14.82	9.42	2.81	38.76	18.73	
%	15	12.3	8.7	3	23	12.9	
Cost of feed: rubles	69.16	73.76	74.28	68.82	76.68	73.45	
%	56.5	61.2	68.6	73.3	45.5	50.6	
Total expenditures (rubles)	122.41	120.53	108.28	93.89	168.54	145.27	
Cost of 1 quintal feed units (rubles)	7.91	7.44	11.08	13.62	6.23	5.36	
Digestible protein in 1 feed unit (grams)	98.4	102	111	130	87	90	
Return on feed: growth per 1 quintal feed units (kg)	11.4	10	14.9	19.8	8.1	7.2	
Proportion of mixed fodder in final fodder (%)	30	29.4	56.6	100	12.8	9.1	

utilize the basic sows and to raise the effectiveness of labor within the branch. Thus, the specialized Kolkhoz imeni Gor'kiy of Sakhnovshinsky Rayon sold 266 quintals of pork per 100 hectares of plowland in 1981. Here 23.1 man-hours and 7.8 quintals of feed units were expended per 1 quintal weight gain. The cost of 1 quintal comprised 107.4 rubles and the profit level of the branch--26.5 percent.

In order to reach the necessary level for feeding hogs it is essential to increase the forage fund in kolkhozes and sovkhoses to 32-35 quintals of feed units per 1 hectare of agricultural land with a protein content of 3.5-3.9 quintals. In order to do this it is necessary to achieve a stable grains productivity of 30-35 quintals per hectare, a productivity of root crops of 300-350 quintals per hectare and of perennial grasses for green fodder--180-200 quintals per hectare. Moreover, special attention should be directed at the form in which fodder is utilized. The fact is that today in most enterprises of the oblast up to 70-90 percent of concentrated feeds are in the form of feed mixtures prepared within the enterprise and only 10-30 percent is in the form of mixed fodder.

In those enterprises where concentrated feeds are used in the form of mixed fodder the effectiveness of their use is significantly higher and pork production is more economical.

As convincing proof of this we can cite the results of the work of the industrial Complex imeni 60-Letiya Oktyabrya and of interfarm enterprises where the proportion of mixed fodder in concentrated feeds comprised 100 and 56 percent respectively. Here in comparison with enterprises of other categories (Table 2) the larger protein supply in feed facilitated a better utilization of them. Despite the fact that the cost of 1 quintal of feed used is higher than in specialized kolkhozes and sovkhoses by 40-80 percent respectively, the cost of 1 quintal of pork here is considerably lower and profits from sales are higher.

In Khar'kov Oblast pork production has increased by 39.8 percent in the last 10 years while the productivity of animals being fattened has remained practically unchanged. At the same time the cost of 1 quintal of feed units increased from 6.33 rubles in 1968 to 8.76 rubles in 1978, or by 38.4 percent. This resulted in an increase in the cost of feeds used for the production of 1 quintal of pork from 52.46 to 70.64 rubles. For this reason the continued strengthening of the feed base and the use of more full-value mixed fodder are the basic directions for increasing pork production.

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REGIONAL DISTRIBUTION OF AGRICULTURAL PRODUCTION RESOURCES

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/Article by S.S. Sergeyev, Department of Statistics: "Distribution of USSR Agricultural Production and Methods for Improving It in Light of the Decisions of the May Plenum of the CPSU Central Committee"/

/Text The formation 60 years ago of the Union of Soviet Socialist Republics united the workers of numerous nations and nationalities in our state in behalf of a great cause -- the construction of socialism -- and it permitted the creation today, based upon the achievements of the Great October Socialist Revolution, of a modern and highly developed national economy which provides a unified and complete national economic complex for the country. The economic basis for a unified national economic complex is state socialist ownership of the principal means of production and the production-technical base -- created as a result of implementation of the policies concerned with the industrialization of the country, the all-union industrial elements and production systems, including a unified system of power engineering, a unified transport system, a system for automatic communications and so forth.

It is sufficient to cite only several figures in order to appreciate the gigantic leap forward achieved by the national economy for the country as a whole and by the national economies of the union republics during the period from 1922 to 1981. The overall output volume of USSR industry increased by a factor of 514, gross agricultural output -- by 5.2 and the national income produced and intended for use by workers and for savings -- by a factor of 167. The serious lag that had developed in the economies of the country's national outlying districts was overcome as a result of comradely collaboration and fraternal mutual assistance. During the period mentioned the volume of industrial output in the Kazakh SSR increased by a factor of 902, in the Moldavian SSR -- 903, Tajik SSR -- 874 and in the Armenian SSR -- by a factor of 1,008. With the volume of industrial output in the USSR increasing by a factor of 22 during the period from 1940 to 1981, the volume of industrial output in Lithuania, Latvia and Estonia increased by factors of 61, 46 and 49 respectively. A typical feature of the period of developed socialism is the smoothing out of the level of economic development for all of the union republics.

The national economic complex of the USSR, the planned development of which is directed towards solving the tasks of communist construction, includes mutually

coordinated branch and regional subunits, inter-branch and inter-farm complexes and, finally, primary production cells -- enterprises which provide the foundation for all of the mentioned subunits. Improvements in and the effectiveness of the entire national economic complex are dependent upon the degree of development and the mutual coordination of these structural elements.

Within the national economic system of the USSR, special importance is attached to the national economies of the union republics. If it is incorrect to view the modern national economy of the USSR as a simple summation of the national economies of each of the union republics, then it would be equally incorrect to present the national economy of a republic in the form of a simple summation of the republic elements of the respective branches of the country's national economy. As organic component parts of the unified national economic complex of the USSR, the national economic branches of the republics form at the same time specific republic complexes (sub-systems), which carry out all of the functions assigned to them in conformity with the developed social division of labor at this high level of administration.

As is well known, republic administrative complexes can be viewed as either production-territorial or regional complexes, since they possess a number of features typical of their regions. At the same time, their character is determined to a considerable degree by those many-sided socio-economic and political tasks which must be solved by the union republics. Such republics as the RSFSR and the UkSSR, owing to a great variety of conditions, consist of a number of specific regional complexes (economic regions), which differ in terms of production conditions, structure and specialization. Substantial differences are also observed within these regions. At the same time, owing to definite common natural conditions, there is a good basis for a number of republics merging together into one economic region (for example, the Baltic republics, the Trans-Caucasus republics and the republics of Central Asia).

With growth taking place in the productive forces and the social division of labor and complications appearing in inter-branch relationships, inter-branch complexes (fuel-energy, agricultural-industrial and others) undergo further development and a need arises for exercising special control over them. TPK's /territorial'no-proizvodstvennyy kompleks; territorial-production complex/ are beginning to play an increasingly greater role in the national economy. Representing a totality of the enterprises concentrated on a definite territory, enterprises which are associated with one another technologically or by common sources of raw materials and having a joint production and social infrastructure, a TPK raises sharply the effectiveness of total capital investments and the overall effectiveness of production.

The development of social division of labor, one important goal of which is that of making more complete use, in behalf of the all-union requirements, of those specific, natural and economic conditions of each republic and each region which favor a particular type of production, defines the need for further improvements in the distribution of production.

Inter-republic and inter-regional division of labor are manifested very clearly in agriculture, where definite types of distribution are created for its branches. The distribution of agricultural production is meant to imply, as is well known,

the distribution of the production of the various types of agricultural products among the union republics and large economic regions and within them -- among the krais, oblasts, autonomous republics, rayons and finally enterprises. The distribution of agricultural production takes place under the influence of the laws of social division of labor and thus it is organically associated with the distribution of the natural factors of agricultural production, the level of development of production potential, the distribution of other branches of the national economy, primarily industry, population distribution and so forth.

In so far as soil-climatic conditions are considered to be important factors for production in agriculture, the placement of agricultural production is greatly dependent upon the territorial distribution of these conditions. A portion of the crops has a broad area of cultivation, but there are also crops which are grown only in definite zones and some of them -- only on very limited territories. Animal husbandry is associated with the distribution of field crop husbandry through its feed base, but to a definite degree, especially in terms of those types of livestock which consume mainly concentrated feed, it may be directly independent of it. Nevertheless, the presence of territories having definite natural complexes has been one of the principles underlying the formation of large-scale agricultural zones.

The distribution is greatly influenced by the development of large industrial centers, the population of which must be supplied with fresh vegetables of a definite assortment, early potatoes, milk, eggs and so forth, mainly by means of a food base created in a so-called natural zone.

Thus the specifics of the natural and economic conditions lead to inter-zonal, inter-republic and so forth specialization of agricultural production and to the creation of unique zonal, republic and other regional production structures which differ in terms of the combination of branches and the farm system. The specific nature of the natural and economic conditions at the agricultural enterprises themselves, each of which now occupies a considerable amount of territory, affects the formation of their internal structure as definite production types of farms.

The differences in inter-zonal specialization can develop as a result of the presence or absence of certain types and production forms of enterprises (for example, farms having tea plantings are found only in the Georgian and Azerbaijan SSR's and partially in Krasnodar Kray in the RSFSR; there are no vineyard farms in the BSSR, the Baltic republics or in a large portion of the regions of the RSFSR) and they can also arise out of the differences in the ratios for the corresponding types and forms of enterprises. For example, RSFSR sovkhoses constitute 56.1 percent of all sovkhoses in the USSR, the proportion of pig breeding sovkhoses in the RSFSR compared to the overall number of this type of sovkhos is 76.7 percent, dairy and meat and dairy -- 62.7 and poultry sovkhoses -- 61.8 percent. For a proportion of all sovkhoses in the UkSSR of 10 percent, Kazakh SSR -- 9.9, Baltic republics -- 3.4, Trans-Caucasus republics -- 7.7 and the Moldavian SSR -- 1.7 percent, the proportion of beet sovkhoses in the Ukraine is 42.1 percent, grain and sheep raising sovkhoses in Kazakhstan -- 36.2 and 33.3 percent respectively, dairy and meat and dairy sovkhoses in the Baltic republics -- 8 percent and fruit and grape, fruit and vegetable and fruit and potato sovkhoses in the Trans-Caucasus republics -- 21.6 and in Moldavia -- 5.5 percent.

With the development of production-technical potential and scientific-technical progress, opportunities have appeared for expanding the territorial borders for the production of certain products. For example, sheep raising on glass-covered ground has become possible in practically all areas, the creation of irrigation systems in regions which were previously deserts is making it possible to cultivate cotton in these regions and so forth. At the same time, the development of transport operations is facilitating the shipping of many products to consumers from regions where their production costs are less, particularly with regard to expenditures for power. The trend towards more complete utilization of especially favorable natural conditions in the respective regions, for the production of those products required by society, is rather clearly expressed at the present time. Hence the need for taking into account favorable natural conditions when concentrating the appropriate production efforts remains an important requirement for effective and rational distribution in the future.

The problem of the rational distribution of agricultural production was recognized as a large economic problem during the initial years of the formation of the USSR. The Soviet Union inherited from Czarist Russia a distribution for agricultural production which had developed spontaneously and which was distinguished by an excessive unilateral approach. The formation of specialized zones for the production of agricultural products began even prior to the revolution. However, it advanced under the influence of the laws of the market, with all of the negative features peculiar to such an arrangement. The Czarist Government attempted to make the national outlying districts raw material adjuncts having mainly an extensive system of farming. In addition to regions of extensive grain production and extensive pasture animal husbandry in Russia, regions were designated even prior to the revolution for the production of technical crops (beet production, flax production, cotton production and so forth), but they were characterized by the same backwardness and primitive nature of the means of production and so forth peculiar to the first group of regions.

The socialist state, by implementing policies under the direction of the Communist Party aimed at achieving industrialization for the country and the collectivization of agriculture, successfully overcame the backwardness and disproportions inherited from Czarist Russia, it ensured the complex development of the economies of all of the union republics, it implemented social division of labor as the productive forces were further developed and it achieved improvements in the distribution of agricultural production.

The planned formation of regional and mainly specific republic branch structures and accordingly improvements in distribution took place on a mass scale commencing with the socialist reconstruction of agriculture. However the limited nature of the production resources served to hold back the normal course of this process. It was resumed with new force during the years of the post-war five-year plans.

Let us examine the development of the distribution of agricultural production by union republics during the 10th Five-Year Plan (see Table 1) and the degree to which it conforms to the principal economic criteria which determine rational distribution.

For solving the latter task, let us use materials dealing with the production costs for agricultural products at kolkhozes and sovkhoses in the respective union



republics. The following should be borne in mind during the analysis. When drawing a conclusion as to which types of agricultural products it would be most economically profitable for a particular zone to specialize in the production of, from a national economic standpoint, it will not be sufficient to merely have isolated comparisons for each individual type of product. Rather it will be necessary to have a systematic comparison of the relative levels of production costs for the principal types of products. In zones characterized by increased production costs owing to less favorable conditions, it is more profitable to have a maximum saturation for the production (taking into account the available resources and the laws for the rational organization of a farm) of these types of products, the production expenses for which exceed to a lesser degree the average production expenses throughout the country and in zones having lower than average expenses it is most profitable to specialize in the production of those products the expenses for which deviate to the greatest degree from the average levels. Further, the ratios for production costs are not always accurately reflected owing to the specific nature of the production cost calculations and the existing system of price formation and the ratios for actual production expenses as the total expenditures for live and past labor. In addition, when comparing different republics for the purpose of evaluating the feasibility of concentrating a particular production operation in a particular republic (or region), consideration must also be given to the expenses associated with transporting the products from the production regions to the regions in which the consumers are located. Considered to be of low effectiveness are comparisons of the average production costs for grouped types of products (vegetables, fruit and berries and a portion of the grain crops), under conditions involving large inter-republic differences in the assortment structure for the grouped types of products and sharp inter-republic differences in the production expenses for a group of specific types of products (for example, cabbage, tomatoes, cucumbers and so forth).

In as much as the task of this article includes only a basic evaluation of the distribution trends and not the development of optimum distribution models, we can limit ourselves to the data furnished in Table 2 on production costs and some additional materials concerning products not included in the Table, while remembering of course the facts mentioned above.

In the interest of revealing more clearly the regional peculiarities, the appropriate data for the Lithuanian SSR, Latvian SSR, Estonian SSR, Georgian SSR, Azerbaijan SSR, Armenian SSR, Uzbek SSR, Kirghiz SSR, Tajik SSR and the Turkmen SSR was taken as averages for regions of the Baltic, Trans-Caucasus and Central Asia.

The RSFSR occupies first place in terms of the volume of industrial and agricultural output. The republic has well developed industry, in the numerous branches of which is concentrated a large portion of the country's industrial-production personnel. The territory occupied by the RSFSR constitutes more than three fourths of the entire territory of the USSR and to a considerable degree it reflects a great variety of conditions. Thus the proportion contributed by the republic to the all-union production is the equivalent or average of the proportions of those specialized regions formed within the borders of the Federation. Nevertheless the branch's definite and specific branch character is evident during an examination of the summary data. Thus, during the years of the 10th Five-Year Plan, more than 55 percent of the grain and more than 58 percent of the eggs were produced on

TABLE 1

Proportion of Union Republics in the Production of the Principal Types of Agricultural Products (on the average for 1976-1980, in %)

	RSFSR	UKSSR	Moldavian SSR	BSSR	Baltic Republics	Kazakh SSR	Republics of Central Asia	Trans-Caucasus Republics
Proportion of population	52.2	18.8	1.5	3.6	2.8	5.6	10.1	5.4
Types of Products:								
grain	55.5	21.0	1.4	3.0	2.6	13.4	2.1	1.0
raw cotton	-	-	-	-	-	3.6	89.1	7.3
sugar beets (industrial)	28.8	60.6	3.6	1.4	1.1	2.5	1.7	0.3
flax fibre	39.9	31.4	-	23.9	4.8	-	-	-
sunflower seed	47.0	45.6	5.3	-	-	1.9	-	0.2
potatoes	49.5	24.9	0.4	15.6	5.5	2.4	0.8	0.9
outdoor vegetables	39.3	28.7	4.6	2.8	2.2	4.0	11.5	6.9
fruit and berries	25.3	31.8	8.6	5.0	3.7	2.8	12.0	11.0
grapes	12.7	14.8	22.1	-	-	2.6	12.9	34.9
meat (in dressed weight)	49.6	23.4	1.7	6.0	6.1	6.8	4.1	2.3
milk	52.0	23.5	1.2	6.8	6.1	4.7	3.7	2.0
eggs	58.1	21.4	1.3	4.5	3.3	5.1	3.6	2.7
wool	48.1	6.0	0.6	0.3	0.2	23.1	17.3	4.4

approximately 40 percent of the area of agricultural lands (60 percent of the arable land) and by more than one half (52 percent) of the entire population in the RSFSR; the production of sunflower seed, potatoes, milk, meat and wool was on a level close to the proportion for the population and the proportion for the production of spinning flax and vegetables was 12-13 percent lower. The proportion for the production of fruit, berries and grapes was even lower. The latter is explained to a considerable degree by the fact that the proportion of rayons having favorable conditions for the production of fruit, especially grapes, is less in the RSFSR than it is in a number of other republics.

During the 10th Five-Year Plan the production costs for almost all types of field crop husbandry products, with the exception of vegetables at sovkhoses in the RSFSR, exceeded the average union levels; for grain at kolkhozes (+6 percent) and at sovkhoses (+3 percent), sunflowers at kolkhozes (+7.5 percent) and potatoes at sovkhoses (+6 percent) the excess was rather negligible, for potatoes and vegetables at kolkhozes it was noticeably higher (+17-15 percent) and for sugar beets it was rather considerable (on the order of +30 percent).

The production costs for animal husbandry products, with the exception of egg production at sovkhoses, was also higher than the average union levels, with the excess ranging mainly (not counting egg production at RSFSR kolkhozes) from 1-3 (pork and large-horned cattle meat at sovkhoses) to 7-10 percent. The production cost for eggs at RSFSR kolkhozes was higher by more than 21 percent. One reason for a certain excess in the average production cost levels is the presence in the RSFSR of a number of rayons having relatively less favorable natural production conditions generally.

TABLE 2

Production Costs for Principal Types of Agricultural Products at Union  
Republic Kolkhozes and Sovkhozes, on the Average for 1976-1980 Period  
(in % of average levels at kolkhozes and accordingly sovkhoses of the USSR)

	RSFSR	UKSSR	Moldavian SSR	BSSR	Baltic Republics	Kazakh SSR	Republics of Central Asia	Trans-Caucasus Republics
<b>Kolkhozes</b>								
Grain (less corn)	105.9	77.5	76.3	140.2	162.0	102.7	140.8	120.1
Sugar beets (industrial)	131.0	86.2	82.7	145.5	143.4	117.9	89.7	150.0
Sunflower seed	107.5	92.0	109.8	-	-	101.8	-	158.3
Potatoes	117.4	97.7	168.8	69.7	105.3	173.8	162.1	170.3
Outdoor vegetables	115.2	85.0	144.7	81.5	85.1	147.8	96.4	115.9
Milk	107.4	90.9	95.3	94.9	90.1	104.7	106.3	126.0
Weight increase in young stock and weight increase from fattening:								
large-horned cattle	106.3	91.1	111.8	100.9	91.8	102.4	111.3	131.1
pigs	110.5	89.1	88.1	115.0	92.1	100.3	100.0	142.3
sheep	108.7	121.5	132.0	181.9	168.7	76.2	90.8	101.7
Eggs	121.4	88.9	152.0	86.9	78.9	205.4	136.9	157.0
Wool	108.7	105.4	102.8	153.1	179.5	88.9	87.3	87.4
<b>Sovkhoses</b>								
Grain (less corn)	102.8	68.1	77.5	131.1	156.9	98.2	161.3	129.9
Sugar beets (industrial)	129.7	60.0	61.0	123.1	130.8	107.7	67.2	123.6
Sunflower seed	105.8	90.8	117.4	-	-	105.4	-	222.2
Potatoes	106.3	105.1	177.2	61.8	87.6	134.3	132.2	156.1
Outdoor vegetables	94.9	87.0	126.4	68.1	84.4	148.0	115.0	144.1
Milk	105.4	83.2	90.7	91.4	82.1	99.3	107.9	112.9
Weight increase in young stock and weight increase from fattening:								
large-horned cattle	102.8	84.6	107.9	93.7	85.2	104.1	112.4	117.9
pigs	101.0	86.2	108.8	117.1	93.4	105.0	110.0	142.9
sheep	110.7	102.5	134.3	173.9	192.3	93.1	101.2	115.7
Eggs	98.7	101.3	117.3	74.7	92.1	87.2	127.7	146.5
Wool	106.0	93.8	131.7	159.8	218.6	99.3	103.1	99.0

Another reason lies in the fact that the meteorological conditions for production during the 10th Five-Year Plan on the territory of the RSFSR were on the average relatively less favorable compared to conditions in a number of union republics than during other periods. For example, during the 9th Five-Year Plan the relative excess in production expenditures for the principal types of products at kolkhozes and sovkhozes in the RSFSR, compared to the average union level, was either substantially less than during the 10th Five-Year Plan or it was almost lacking entirely (the output from the raising and fattening of large-horned cattle at kolkhozes +0.4 percent, sovkhozes +1.5 percent, the output of pig farming at kolkhozes +1.6 percent, eggs +1.9 percent). The production cost for grain and the output of pig farming at sovkhozes was somewhat lower than the average union level (-1.2 and -0.1 percent respectively).

At the same time, it was clearly apparent that in those areas where a branch was relatively more developed, for example the production of vegetables, eggs, beef, pork and wool at sovkhozes in the RSFSR, the production costs were either lower or just slightly higher than the average union level for sovkhozes.

Thus, if we overlook the production of sugar beets, then the corresponding growth in the volume of the principal types of products produced in the RSFSR is economically sound and cannot bring about an increase in the average production expenses in the USSR. With regard to the production of sugar beets, the mentioned considerable excess in their production cost compared to the average union level is explained by the high expenses for beet production in rayons of the nonchernozem zone, the central chernozem zone and especially in Siberia, while in Krasnodar Kray (north Caucasus) the production expenses are substantially lower than the average level. In view of the existence in the first group of rayons of the beet-sugar industry, which requires raw materials, and the positive effect generated by beet production on the overall level of production intensification, it would be inadvisable at the present time to restrain this production. However, an economic requirement exists for lowering the production expenses here in every possible way, based upon improved cropping power and the introduction of an industrial technology.

Large economic regions of union importance having rather clearly expressed agricultural specialization have been formed throughout the republic. For example, the northwestern, central and Volgo-Vyatsk regions specialize in the production of meat and dairy products, potatoes, spinning flax and in zones which adjoin large industrial centers -- vegetables and eggs.

The great losses in human resources sustained during the period of the Great Patriotic War, the poor reclamative status of the land (swamps, water-logged land, sour soils, fields contaminated by rocks and bushes and so forth) and the weak logistical base seriously held back the development, during the post-war period, of agricultural production on these and adjoining rayons in the nonchernozem zone of the RSFSR and they hindered the utilization of a number of conditions favorable for agriculture (relatively high stability of meteorological conditions, an adequate supply of precipitation on the average and the potential for creating a reliable feed base for dairy cattle husbandry and so forth).

In order to overcome the mentioned difficulties and achieve considerable improvements in agriculture, a special purpose regional program aimed at developing

agriculture in the nonchernozem zone and industrializing and intensifying it in every possible way has been undergoing implementation since 1974 based upon a decision handed down by the party and government.

The leading branches of the central-chernozem region include the production of grain, sunflower seed, fruit, sugar beets, potatoes, meat and milk. In conformity with the decree of the CPSU Central Committee and the USSR Council of Ministers entitled "Further Development of Agriculture in the Central-Chernozem Region of the RSFSR," the implementation of a special purpose regional program for accelerating agricultural development in this economic region and intensifying agriculture in every possible way was begun in 1981.

The north Caucasus economic region, which possesses diverse and extremely favorable natural conditions for the cultivation of many crops, furnishes large quantities of high quality winter wheat and corn grain, fruit, grapes, sugar beets, the products of essential oil crops, pork and the products of meat and dairy animal husbandry and poultry raising. During the years which have elapsed since the March (1965) Plenum of the CPSU Central Committee, the country's largest base for the cultivation of rice has been created here based upon the installation of a new and modern irrigation system.

The Volga region occupies an important place in the production of grain, sunflower seed, the products of meat and dairy cattle husbandry, pig farming, sheep breeding and poultry raising. The carrying out of large-scale irrigation work in the left bank regions of Saratov, Kuybyshev and Volgograd Oblasts must in the not too distant future ensure the conversion over to an intensive type of farming and to the creation of enterprises which specialize in the production of high quality grain, vegetables, beef and pork, eggs and poultry meat.

The regions of western and eastern Siberia contain vast areas which specialize in the production of spring wheat and barley grain, milk, meat and wool. The Far East is making a considerable contribution towards the production of rice, soybeans and other types of agricultural products. The formation in these regions of such large territorial-production complexes as the western Siberian, Kansk-Achinsk, Bratsk-Ust'-Il'msk, Sayansk and southern Yakutsk and also the construction of the Baykal-Amur Trunkline and the associated industrial development of the zone through the formation of a number of new TPK's /territorial-production complex/ raises the requirement for developing the intensive production of milk, eggs, poultry meat, pork, vegetables and potatoes. Based upon the infrastructure of some TPK's and industrial centers, a number of agricultural enterprises of the intensive type have been created and are now in operation in connection with the production of eggs and broilers, milk, pork, hothouse vegetables and outdoor vegetables.

In a number of regions of the RSFSR, especially southern regions, agroindustrial enterprises and associations for viniculture, wine-making, the production of fruit and vegetables, the products of essential oil crops, poultry raising and so forth have been created and are developing their activities successfully.

The Ukrainian SSR occupies second place in terms of the proportion of agricultural products produced; the republic's population is 18.8 percent and the area of agricultural land 7.6 percent (arable land 15.1 percent). Having extremely

favorable soil-climatic conditions at its disposal and possessing highly developed industry, the Ukraine produced during the 1976-1980 period on the average more than 60 percent of the sugar beets produced annually, almost one third of the union production of spinning flax and fruit, more than 45 percent of the sunflower seed, almost 25 percent of the milk and meat, more than one fifth of the gross yield of grain and eggs and 15 percent of the grape harvest. Within the republic there are highly developed power engineering and capital-forming branches of industry, including tractor and agricultural machine building and numerous enterprises of various branches of the food, meat and dairy and light industry, which operate on the basis of agricultural raw materials. An important accelerating factor for the intensification of agricultural production is the implementation of large-scale irrigation based upon the use of irrigation systems -- the Kakhovka and the North Crimean Canal. Within the confines of the republic, several zones have been formed for specialized agricultural production and the processes of agroindustrial integration are being developed successfully and on a large scale.

With regard to data on production costs, it can be established that the production of the principal types of agricultural products, excluding the products of sheep raising, is cheaper here than the average for the USSR owing to the above-mentioned circumstances. Thus, for grain the reduction compared to corresponding average levels at sovkhoses and kolkhoses in the USSR is 32 and 22.5 percent respectively, for sugar beets (industrial) 40 and 14 percent, vegetables 13 and 15 percent and for products of dairy and beef cattle husbandry and pig farming at sovkhoses it is on the order of 17-14 percent and at kolkhoses -- 9-11 percent. In the case of potatoes, the production cost at kolkhoses is somewhat lower than the average for the USSR and at sovkhoses it is higher than the average. This is explained mainly by zonal peculiarities in the distribution of the kolkhoses and sovkhoses throughout the Ukrainian SSR. The production of the meat and wool of sheep at kolkhoses and the meat of sheep at sovkhoses is more expensive than the average for the USSR.

The Moldavian SSR can be referred to as the national orchard and vineyard. Roughly 1.5 percent of the republic's population produces more than one fifth of the gross yields of grapes, 8.6 percent of the fruit and berries, a considerable proportion of the tobacco, approximately 5 percent of the vegetables, mainly heat-loving types, and a substantial portion of the essential oil raw materials. A modern industry has been created in Moldavia and beet tractors and agricultural machines, including those used for the mechanization of production and for viniculture, refrigeration equipment for fruit storehouses and so forth are being produced. The republic has large modern plants for the canning, wine-making, sugar, creamery, dairy-cheese making, tobacco and other branches of the food and light industry, which process agricultural raw materials. It occupies a leading place in the production of tobacco and third place in the production of grape wines, fruit and vegetable canned goods and in the production of granulated sugar from beets and sunflower and essential oils.

Interfarm cooperation in the animal husbandry branches has been carried out on a large scale throughout the republic and the agroindustrial integration of agricultural enterprises specializing in the production of grapes, fruit, sugar beets, vegetables, essential oil crops and some other types of products with the processing enterprises has undergone extensive development.

Returning once again to the data on production costs, it is apparent that the production costs for grain, fruit, grapes, sugar beets, milk and at kolkhozes -- also the products of pig farming -- are lower than the average union levels. The production costs for potatoes, mutton, eggs and wool (at sovkhoses) are considerably higher than the average and the costs for the production of large-horned cattle meat are also higher than the average. With regard to vegetables, their highest production cost level is associated mainly with the assortment structure, in which tomatoes and other heat-loving and also early vegetables predominate. When smoothing out the assortment structure, the relative production cost is lower.

Agriculture in the BSSR specializes mainly in the production of potatoes, spinning flax, meat and milk. During the 10th Five-Year Plan, roughly 3.6 percent of the republic's population furnished on the average one fourth of the union's crop of spinning flax each year, one seventh of the potatoes and 6-6.8 percent of the meat and dairy products. Notwithstanding the low natural soil fertility found here, comparatively high and stable cropping power levels were achieved here for the agricultural crops based upon farming intensification, including for grain crops, and this made it possible to obtain more than 3 percent of the union's grain harvest from an area constituting only 2.3 percent of the grain crop sowings in the USSR. Of those branches of industry which ensure the mechanization and intensification of agricultural production, the production of various types of tractors, many types of agricultural machines, including those used for feed procurement purposes, land reclamation vehicles, trucks, potassium fertilizers and so forth, underwent the greatest development in the republic. Of those branches which process the agricultural products, the branches of the meat and dairy industry, the flax processing industry and others are the most developed.

Within the republic the production costs for potatoes, vegetables, apples and eggs are considerably lower than the average level and the production costs for milk at sovkhoses and kolkhozes and the products obtained from the raising and fattening of large-horned cattle at sovkhoses are lower than the average. Owing to unfavorable natural conditions, the specific expenditures for the production of grain, sugar beets and the products obtained from the raising of sheep are considerably higher than the average.

The Baltic republics play an important role in the production of milk, meat, bacon pork, potatoes and spinning flax. Extensive land drainage reclamation work carried out over the past 20 years has made it possible to raise considerably the economic fertility of the soils in the region and to create a strong foundation for further improving the cropping power of the agricultural crops, especially forage and grain forage crops. In the Baltic republics the production costs for vegetables, potatoes (at sovkhoses), milk, the meat of large-horned cattle and pork and eggs are lower than the average and those for grain, sugar beets and the products obtained from sheep raising are considerably higher than the average.

Following the development of the virgin lands, the Kazakh SSR, in which are concentrated almost 35 percent of the country's agricultural lands and 15.6 percent of the arable land, became the new national grain area. Roughly 5.6 percent of the republic's population produces more than 13 percent of the gross grain yield, approximately 25 percent of the wool obtained and 6.8 percent of the meat. In addition, Kazakhstan is making a substantial contribution towards the production of

raw cotton, sunflower seed, grapes and vegetable and melon crops. Here the production costs for the products obtained from sheep raising are considerably lower than the average level, the production costs for grapes and the products obtained from large-horned cattle husbandry are close to the average level, the production costs for sugar beets are higher than the average level and those for potatoes and vegetables grown outdoors are considerably higher. The great differences in the relative production cost levels for eggs at kolkhozes and sovkhozes (greater by a factor of two at republic kolkhozes than the average for kolkhozes throughout the USSR; at sovkhozes, among which there are large poultry farms, these costs are substantially lower than the average for sovkhozes throughout the USSR) underscore the considerable opportunities which are available for lowering the production costs for these products based upon concentration and specialization. Nor is use being made of the opportunities available for lowering the production costs for potatoes based upon the intensification and concentration of potato production in foothills regions or for achieving a sharp reduction in the production expenses for vegetables by concentrating their cultivation at specialized farms on irrigated lands.

In the republic, on the territory of which prior to the revolution there was a semi-nomadic feudal economy with primitive enterprises for the processing of agricultural raw materials, a highly developed industry has been created, including tractor and agricultural machine building, the production of land reclamation equipment and animal husbandry equipment and there are many enterprises of the food and light industry, large combines of the meat and dairy industry and so forth.

The republics of Central Asia are the principal producers of raw cotton (approximately 90 percent of the union production). They also furnish a considerable proportion of the wool, karakul pelts, grapes, fruit and the products of essential oil crops. Sugar beet cultivation is well developed in the Kirghiz SSR, in the Uzbek SSR -- silkworm breeding (more than 45 percent of the union production of raw silk) and rice and kenaf production, in Tajikistan -- silkworm breeding and in Turkmenistan -- horse breeding. During the years of Soviet rule, these republics have achieved unprecedented improvements in their socio-economic development, the feudal-capitalist attitudes of exploitation have been replaced by socialist attitudes of comradely collaboration, large enterprises of the extractive and manufacturing industry have been created on a modern technical level, including machine building, and the production of land reclamation and agricultural machines has been organized, including those used for the mechanized harvesting of cotton, bast crops and so forth and large enterprises have been built for the production of mineral fertilizers, including nitrogen fertilizers, water-power terminals of a complex nature (electrification, irrigation and so forth) have been installed and are being installed. The canning, wine-making, cotton, silk, leather shoe, dairy-creamery and other branches of the food and light industry have been developed in the republics of Central Asia and agroindustrial integration is being carried out on a great scale.

In connection with the development of cotton production and other intensive branches of agricultural production, priority importance is being attached to the carrying out, in conformity with Lenin's Decree of 17 May 1918 and subsequent decisions handed down by the party and government, of irrigation work and the development of 500 hectares of land in the Golodnaya Steppe region. The transformation of the



region's economy was greatly influenced by the construction of the Great Fergana, Northern Fergana and Great Karakum Canals, the Vakhsh irrigation system and by other large-scale land reclamation installations. The primitive irrigation arrangements in the republics of Central Asia were replaced by numerous irrigation systems of a high engineering-technical level and this provided a reliable foundation for further intensification of agricultural production.

In the central asian region the production costs for fruit (at kolkhozes and sovkhoses), vegetables grown outdoors, grapes and the products of sheep breeding (at kolkhozes) were lower than the average level and the production costs for the production of grapes and the products of sheep breeding (at sovkhoses) were close to the average level. The production costs for the production of sugar beets (Kirghiz SSR) were considerably lower than the average. However, it should be borne in mind that sugar beets are cultivated here on irrigated lands and thus a considerable portion of the irrigation expenses is borne by the state and should not be included in calculating the production costs, but even taking corrections into account the economic effectiveness of this highly intensive production work here is beyond question. The production costs for the production of potatoes, eggs and grain (only in the Kirghiz SSR was the production costs for grain at kolkhozes lower by 2.4 percent and at sovkhoses higher by 2.8 percent)) are considerably higher than the average here.

The intensification of animal husbandry and farming operations and in potato production also the concentration of potato production operations in foothills regions are of great importance for reducing the output costs.

The Trans-Caucasus republics are the principal producers of grapes, the products of sub-tropical and citrus crops, tea and vegetables. Cotton is also produced in the Azerbaijan SSR. The republics produce a considerable proportion of the essential oil raw materials, wool, raw silk (27 percent of the union production) and a number of other types of agricultural products. A highly developed industry has been created here. The enterprises of agricultural machine building in the Trans-Caucasus are producing tea harvesting machines, land reclamation equipment and diverse types of agricultural machines for work under mountainous conditions and the production of mineral fertilizers has been organized. Of the branches which process agricultural products, the wine-making and canning industries are the most developed.

In these republics the production costs for stone fruit crops and wool are lower than the average level, the production costs for the products obtained from the raising and fattening of sheep are close to the average and the production costs for the production of grain, sugar beets, sunflower seed, potatoes, the products obtained from large-horned cattle husbandry and pig farming and eggs are substantially higher than the average level. The relative excess in the production costs for products obtained from large-horned cattle husbandry and eggs is noticeably less at sovkhoses than at kolkhozes.. These and other facts indicate that with proper development of the branches the production expenses for the mentioned products can be reduced substantially. With regard to vegetables, their high production costs are explained to a considerable degree by the large proportion of more valuable vegetables and vegetables harvested early for delivery to large industrial centers. The production expenses for grapes are higher than

the average level in the Trans-Caucasus owing to specific conditions and yet the high quality of the grapes ensures a high national economic profitability for this branch. Nevertheless the task of lowering the production expenses for agricultural products, especially animal husbandry products, is considered to be one of the more important problems here.

A review of the stability of inter-republic proportions in the production of the various types of agricultural products and the trends observed over the past 20 years is of definite interest. In order to exclude the effect of fluctuations in meteorological conditions and other short term factors which cause considerable periodic deviations in the structure for the distribution of the production of individual types of products, when proceeding from one year or even one five-year period to another, the data for the past two decades should ideally be averaged out -- 1961-1970 and 1971-1980. Initially, let us examine some data for field crop husbandry (see Table 3).

It is apparent from the data furnished in Table 3 that the proportions contributed by the BSSR and the Baltic Republics towards grain production increased noticeably during the past decade compared to the previous one, an increase of roughly 1 point was noted for the Kazakh SSR, an increase of 0.4 points for the republics of Central Asia and with the proportion contributed by the RSFSR decreasing by more than 3 points. Based upon data for average cropping power over a period of many years and the areas under crops, it is not difficult to establish the fact that the increases in the proportions by the BSSR and Baltic republics came about mainly as a result of intensive factors. Whereas on the average over a period of 10 years the cropping power in the USSR increased by 28.5 percent, including 22.3 percent in the RSFSR, it increased by 98.1 percent in the BSSR owing to excessive rates for the intensification of farming and in the Baltic republics -- by 47.4 percent. A further look tells us that this served as the basis for definite improvements in the inter-republic structure for the production of dairy husbandry products. In potato production the proportion contributed by the UkSSR and BSSR increased, while the proportion for the RSFSR declined. In vegetable production, the proportions contributed by the Moldavian SSR, the republics of Central Asia and the Trans-Caucasus increased. The latter was definitely the result of the carrying out of purposeful measures aimed at expanding the production of heat-loving and early vegetables in regions having more favorable conditions for such production, for the purpose of supplying them to large industrial centers in the northern and central portions of the RSFSR and to Siberia.

The distribution of the production of spinning flax has changed considerably: the proportion contributed by the RSFSR has decreased by roughly 12 points, the UkSSR's proportion has increased by almost the same amount and the proportion contributed by the BSSR has increased somewhat. The decrease in the RSFSR's proportion is a direct consequence of an absolute reduction in the sowing areas in the flax growing regions of the RSFSR (northwestern, central and Volgo-Vyatsk regions), which during the post-war period have experienced an overall shortage of labor resources. In 1980, the area sown in spinning flax here was 30 percent less than in 1961. In the UkSSR the area sown in flax in 1980 was even somewhat greater (-9.5 percent) than in 1961.

Let us take a look at the animal husbandry data furnished in Table 4.

TABLE 3

Distribution of Production of Principal Types of Field Crop Husbandry Products (in % of average annual level for the USSR) On the Average for 1961-1970 (I) and 1971-1980 (II)\*

Type of Product	Periods	RSFSR	UKSSR	Moldavian SSR	BSSR	Baltic Republics	Kazakh SSR	Republics of Central Asia	Trans-Caucasus Republics
Grain	I	59.4	21.2	1.45	1.95	1.9	11.7	1.35	1.05
	II	56.1	21.5	1.4	3.05	2.55	12.65	1.75	1.0
Raw cotton	I	-	-	-	-	-	1.4	93.0	5.6
	II	-	-	-	-	-	3.8	89.7	6.5
Spinning flax	I	54.9	17.6	-	22.8	4.7	-	-	-
	II	42.6	28.8	-	24.2	4.4	-	-	-
Potatoes	I	54.85	22.0	0.4	13.7	6.35	1.6	0.5	0.6
	II	51.0	24.15	0.35	15.05	5.75	2.2	0.75	0.75
Outdoor vegetables	I	48.1	29.15	2.65	4.0	3.6	3.45	5.15	3.9
	II	41.7	28.65	4.15	3.05	2.65	3.95	9.75	6.1
Fruit and berries	I	28.3	32.8	9.8	5.1	3.2	2.2	10.1	8.5
	II	25.3	31.8	8.6	5.0	3.7	2.6	12.0	11.0
Grapes	I	14.4	23.4	23.2	-	-	2.5	12.1	24.4
	II	12.7	14.8	22.1	-	-	2.6	12.9	34.9

\* For fruit and grapes -- respectively for 1971-1975 (I) and 1976-1980 (II).

TABLE 4

Distribution of Production of Principal Types of Animal Husbandry Products (in % of average annual level for the USSR) On the Average for 1961-1970 (I) and 1971-1980 (II)

Type of Product	Periods	RSFSR	UKSSR	Moldavian SSR	BSSR	Baltic Republics	Kazakh SSR	Republics of Central Asia	Trans-Caucasus Republics
Milk	I	55.6	22.4	0.9	5.8	6.4	4.6	2.6	1.7
	II	52.7	23.4	1.1	6.7	6.2	4.6	3.5	1.8
Meat	I	51.6	23.2	1.5	5.2	5.6	7.1	3.7	2.1
	II	50.2	23.4	1.6	5.8	6.0	6.9	3.9	2.2
Eggs	I	57.6	24.1	1.4	3.8	3.7	3.7	3.1	2.6
	II	58.2	21.6	1.3	4.5	3.4	4.9	3.5	2.6
Wool	I	48.9	6.4	0.9	0.4	0.5	22.0	16.4	4.5
	II	48.8	6.0	0.6	0.3	0.2	23.0	16.8	4.3

Here it should be noted that in the all-union production of milk, over the past decade and compared to the previous one, the proportions contributed by the UkSSR and the BSSR increased while that for the RSFSR decreased; in the production of meat the proportions contributed by the BSSR and the Baltic republics increased somewhat while the RSFSR's proportion decreased by 1.5 points; in egg production the proportion of the UkSSR decreased while that for the Kazakh SSR and to a certain degree the RSFSR and BSSR increased noticeably; in the case of wool production the proportion of the Kazakh SSR increased while the proportions of the Baltic republics and Belorussia decreased, thus reflecting rather sharply the trend during the post-war years towards a curtailment of sheep raising in these regions. On the whole, the structure of the distribution of animal husbandry production had stabilized to a considerable degree.

However, it bears mentioning that the materials cited do not reflect the many changes in distribution for the respective economic regions and agricultural zones and sub-zones within the union republics; they also fail to provide an appreciation of the changes in distribution in individual grain and vegetable crops. For example, during the 1971-1980 period, in connection with the creation of the new base for rice production in Krasnodar Kray, a substantial increase took place in the RSFSR contribution to rice production and so forth.

Meanwhile, considerable opportunities for improving distribution during a given stage in the development of agricultural production are embodied precisely in a more rational production distribution for certain types of products within the republics -- by oblasts, rayons and enterprises, with greater consideration being given to the extent to which certain conditions favor the individual crops and types of livestock.

The USSR food program for the period up to 1990, approved during the May (1982) Plenum of the CPSU Central Committee, has assigned new and responsible tasks to the country's agro-industrial complex and to all of the republics. In order to achieve rational food norms for the population, grain production during the 12th Five-Year Plan must exceed the production volume achieved during the 10th Five-Year Plan by 22-24 percent, meat production (in dressed weight) by 35.1-38.5, milk -- by 12.2-14.3, potatoes -- by 11.4, vegetable and melon crops -- by 42.3-50, fruit and berries -- by 45.8-56.2, grapes -- by 78.6-96.4, sugar beets -- by 15.4-16.5 and sunflower seed -- by 35.8-41.5 percent.

All of the republics must increase considerably their production of food products based upon further development of the productive forces in agriculture and maximum intensification in field crop husbandry and animal husbandry. One of the most important factors of intensification and one which brings about improvements in the fertility of lands is that of land reclamation. During the period from 1980 to 1990, the area of irrigated lands will be increased to 23-25 million hectares and drained lands to 18-19 million hectares. In the RSFSR, 3.3 million hectares of irrigated land and 3.7 million hectares of drained land will be placed in operation, in the UkSSR -- 1 million hectares of irrigated and 1.3 million hectares of drained land and in the BSSR -- 110,000 hectares of irrigated and 950,000-970,000 hectares of drained land. In the Kazakh SSR, the new irrigated tract will amount to 820,000 hectares, in the republics of Central Asia -- 1.33-1.35 million hectares and in the Trans-Caucasus republics -- 340,000 hectares. In addition, watering operations will

be carried out on pastures in the desert and semi-desert regions of the Kazakh SSR on an area of 22 million hectares and in Central Asia -- on 11.75 million hectares, including 8.4 million hectares in the Turkmen SSR and 555,000 hectares in the Trans-Caucasus republics. The tract of newly drained lands in the Baltic republics will amount to 1.6 million hectares.

During the planned period, construction will be completed on a number of large irrigation systems in the RSFSR (Komsomol'skaya and Privolzhskaya systems in Saratov Oblast, Gorodishchenskaya System in Volgograd Oblast and the Krasnodarskaya System) and in the UkSSR (Dunay-Dnestrovskaya and Kakhovskaya systems), the construction of the Great Stavropol Canal in the RSFSR will be continued and the installation of the first phase of the North Crimean Canal and the first phase of the Priazovskaya Irrigation System and others in the UkSSR will be started. In the Uzbek SSR, the plans call for complex land development in the Karshi and Dzhibak Steppe regions, in the Turkmen SSR -- for the completion of construction work on the Karakum Canal, in the Kirghiz SSR -- the completion of work on the Papanskoye Reservoir, in the Kazakh SSR -- for work to be continued on the irrigation of lands in the Kyzylkum Steppe and so forth.

Included among the large-scale operations associated with drainage reclamation are: completing construction on the priority projects for anti-flood protection for the agricultural lands in the forest district (BSSR), the drainage and development of lands in the Kolkhida Lowlands (Georgian SSR), land reclamation in the Barabinsk Lowlands and the Kulunda Steppe region (RSFSR) and others.

Factors of priority importance for all of the country's republics and zones include: a planned increase in the production and applications of mineral and organic fertilizers and herbicides and growth in the deliveries of tractors, harvesting combines, trucks, agricultural and land reclamation machines and other items of technical equipment employed in agriculture.

A powerful factor for raising the cropping power of agricultural crops and the productivity of agricultural animals must be that of breeding, improving and introducing into operations on an extensive scale highly productive plant varieties and strains of agricultural animals which will be suitable for the industrial technologies and zonal conditions.

When determining the rates of growth for the production of specific types of agricultural products, from the standpoint of the republics, consideration must first of all be given to the role played by each of them in satisfying the union requirements for those types of products which a particular republic is specializing in the production of; accordingly it will be necessary to evaluate the possibility of satisfying this increasing requirement by increasing production in the republic. It should also be borne in mind that with growth in industry and in the municipal populations in all of the republics, an increase will also take place in the internal demand for a number of important but difficult to transport types of products (fresh milk, many vegetables, fresh meat and so forth), the production of which must be distributed, to the degree that it is possible, within a relatively small distance from the area of final consumption. In the process it should be borne in mind that agricultural production specialization generally, and territorial specialization at the republic or large region level in particular,

does not exclude but rather it assumes the production of additional types of products which are associated with a given project and which raise the degree of use of resources and, it follows, the overall effectiveness of production.

Not counting feed, the production of which is distributed extensively throughout our country (in almost all areas), such products include, as is well known, grain, meat and milk. However, even if we overlook a considerable change in the assortment structure for such group types of products as grain (dozens of crops) and meat (beef, pork, mutton and some other types), then on some farms and in some rayons and republics these types of products appear as principal types and at others they appear as secondary or associated products and yet they are still nevertheless economically necessary. In what amounts should the mentioned types of products be increased, from the standpoint of republics and their regional groups? Let us look at the information furnished in Table 5 in this regard.

It is apparent from Table 5 that in two of the three republics responsible mainly for solving the grain problem, namely the RSFSR and the UkSSR, the rates for increasing the production of grain are at the all-union level and in the Kazakh SSR, where in recent years the reserves for grain production have been utilized more fully and the moisture deficit continues to be a strong limiting factor, the rates are lower than the all-union level, but nevertheless they are also substantial. The plans call for the rates for increasing grain production to be raised considerably higher than the average level in the Moldavian SSR (corn), the BSSR and the Baltic republics, where a great amount of work has been carried out in drainage reclamation and where favorable conditions have been created for further increasing the cropping power of grain crops of a feed nature and lowering the expenses for their production. The productivity of grain crops, including rice and corn, must be raised noticeably on irrigated lands in the republic of Central Asia.

The food program calls not only for an overall increase in grain but also for its production in an appropriate assortment. Thus stable growth in the production of high quality grain for durum and strong wheat varieties must be achieved on farms in the Kazakh SSR, in a number of regions in the RSFSR (north Caucasus, the Volga region, the steppe regions of the Urals area and Siberia) and the southern regions of the UkSSR. The farms in the nonchernozem zone and Volga region of the RSFSR, the forest district of the UkSSR, the BSSR and the Baltic region have been assigned the task of achieving stable growth in the production of winter rye grain.

Improvements in cropping power and increases in the gross yields of millet and buckwheat must first of all be achieved by the kolkhozes and sovkhoses in a number of regions of the RSFSR (central chernozem region and a number of regions in the nonchernozem zone of the RSFSR, the Volga region, southern Urals and Western Siberia) and also in the UkSSR and the Kazakh SSR. In the interest of increasing the resources of fodder grain, in addition to growth in the production of barley and oats, the plans call for the gross yield of corn grain to be raised to 20 million tons by 1990 compared to only 9.5 million tons in 1980. The task has been assigned of intensifying the specialization and concentration of corn grain production at kolkhozes and sovkhoses in the UkSSR, the Moldavian SSR, the north Caucasus and lower Volga regions in the RSFSR, the Kazakh SSR and the republics of Central Asia and the Trans-Caucasus.

TABLE 5

Tasks of USSR Food Program Up To 1990 for Increasing the Production of Grain, Meat and Milk (annual average)

	Grain			Meat (in dressed weight)			Milk		
	Millions of Tons		In % of 1976-1980	Millions of Tons		In % of 1976-1980	Millions of Tons		In % of 1976-1980
	1976-1980	1986-1990		1976-1980	1986-1990		1976-1980	1986-1990	
	1976-1980	1986-1990		1976-1980	1986-1990		1976-1980	1986-1990	
USSR	205	250-255	122-124	14.8	20-20.5	135.1-138.5	92.7	104-106	112.2-114.3
RSFSR	113.9	140-142	122.9-124.7	7.4	9.8-10.0	132.4-135.1	48.2	53-54	110.0-112.0
UKSSR	43.2	53.54	122.7-125.0	3.5	4.6-4.7	131.4-134.5	21.8	24.0-24.4	110.1-111.9
Moldavian SSR	2.9	3.9-4.0	134.5-137.9	0.25	0.34-0.35	136.0-140.0	1.1	1.4	127.3
BSSR	6.2	8.2-8.6	132.3-138.7	0.88	1.1-1.2	125.0-136.4	6.3	6.9-7.0	109.5-111.1
Baltic republics	5.1	7.2-7.8	141.2-152.9	0.91	1.17-1.19	128.6-130.8	4.7	6.2-6.5	131.9-138.3
Kazakh SSR	27.5	30.5-31.5	110.9-114.5	1.0	1.4	140.0	4.4	5.3-5.4	120.5-122.7
Republics of Central Asia	2.85*	4.1*-4.3*	143.9*-150.9*	0.60	0.98-1.02	163.3-170.0	3.39	5.2-5.3	153.4-156.3
Trans-Caucasus Republics	2.1	2.27-2.32	108.1-110.5	0.35	0.52-0.53	148.6-151.4	1.83	2.35-2.41	128.4-131.7

\* Excluding the Kirghiz SSR.

The production of pulse crops must be increased to 14 million tons by 1985 and to 18-20 million tons by 1990. The gross yields of these crops must be increased considerably in the Volga region, the central-chernozem and central regions of the RSFSR, the UkSSR, BSSR and the Kazakh SSR. The plans also call for growth in the production of brewing varieties of barley in all zones of its commodity production.

In the task for the production of meat and milk (see Table 5), the rates of growth in the RSFSR, the UkSSR and BSSR are close to the average union rates, they are higher than the average in the Moldavian and Kazakh SSR's and also higher for milk in the Baltic republics. This is rather clear in light of everything mentioned above. At first glance it may seem strange that the highest rates of growth for dairy products and especially meat are called for during this period in the republics of Central Asia and the Trans-Caucasus. However, it should be borne in mind first of all that there are large tracts of pasture land in these regions, the complete use of which is increasing considerably the opportunities for comparatively cheap fattening. Secondly, the introduction of cotton-alfalfa crop rotation plans in the cotton growing regions, while simultaneously raising the cropping power of the alfalfa, will make it possible on a large scale (by a factor of 1.5-2) to increase the feed resources for intensive animal husbandry. Thirdly, the development and improvements in the effectiveness of animal husbandry are coming about owing to the increasing demand for the mentioned products by the local population, primarily municipal populations.

An important direction to be followed for improving distribution is that of making maximum use of the especially favorable conditions available in the Moldavian SSR, the Trans-Caucasus, the southern regions of the RSFSR and the UkSSR and the regions of Central Asia, for the production of grapes, southern

fruits and the cultivation of heat-loving and early vegetable crops. Thus the food program poses the task of creating in the mentioned regions large-scale specialized farms and agroindustrial enterprises for the production and processing of fruit and vegetable products. During these years the mentioned regions must become the principal base for supplying the populations in the central and northern portions of the European part of the USSR, the Urals, Siberia and the Far East with the products of heat-loving vegetable and fruit and berry crops.

With a planned increase by a factor of 1.4-1.5 in the average annual production of vegetables and melon crops in the USSR during the 12th Five-Year Plan and compared to the 10th, the production of these products in the Georgian SSR will increase by a factor of 1.7-1.8 and in the Turkmen SSR -- by a factor of 2.4-2.6. By 1990, the production of vegetables and melon crops in the Kazakh, Uzbek and Tajik union republics will have increased twofold.

The production of fruit and berries will increase at accelerated rates in the Moldavian SSR (the average annual production during the 12th Five-Year Plan must be greater by a factor of three than that for the 10th, with the average increase for the USSR on the whole being a factor of 1.5-1.6. These same accelerated rates will subsequently be noted in the Uzbek and Armenian SSR's (by 1990, the increases in production levels will be by factors of 1.8 and 1.7 respectively).

The population's requirements for potatoes and the products of late vegetable, fruit and berry crops must be satisfied mainly by production operations carried out in the regions of their consumption.

The rates for increasing the production of grapes in the southern regions of the RSFSR and in the Azerbaijan SSR will be considerably higher than the average (during the 12th Five-Year Plan they will be higher than the rates for the 10th by factors of 2.6 and 2.3-2.5, with the average increase for the USSR being by a factor of 1.8-2). By 1990, grape production in the Uzbek SSR will have increased by threefold, in the Georgian and Tajik SSR's -- by twofold and in the UkSSR -- by a factor of 1.8. In the Moldavian SSR, where grape production developed at rapid rates in previous years, the production of grapes during the 12th Five-Year Plan will increase by a factor of 1.4-1.5 above the figure for the 10th Five-Year Plan.

Special attention must be given to the production of stone fruit crops in the Moldavian SSR, to table grape and seedless grape varieties and lemons in the Uzbek SSR and to lemons and mandarins in the Georgian SSR. The average annual production of tea leaves (high grade) in the Georgian SSR will increase from 431,000 tons during the 10th Five-Year Plan to 635,000 tons during the 12th, with quality improvements being realized at the same time.

In the interest of increasing the production of vegetable oils, in addition to raising the production of sunflower seed, the production of soybeans on irrigated lands must be expanded in the European portion of the USSR, Central Asia and Kazakhstan and the cultivation of rape must be developed in the western oblasts of the UkSSR, the BSSR, the Baltic republics and in a number of regions in the RSFSR and the north Caucasus.

An important feature of the USSR food program for the period up to 1990 is the fact that it calls for comprehensive production support for the established goals,



including planned distribution of resources and an administrative system which guarantees coordinated and proportional development for the entire agroindustrial complex, that is, both for branches which provide agriculture and other branches of the APK /agroindustrial complex/ with the means of production and also for those branches which process the agricultural raw materials and supply finished food products for the population. The capabilities of the food industry, which will increase during the decade, and their improved utilization will make it possible to increase considerably the production of meat and dairy products, fruit and vegetable canned goods and diverse types of potato products, fruit and grape juices, fresh-frozen fruit, berries and vegetables, tomato products, jams, preserves, stewed fruit and so forth.

By 1985, the production of canned goods for childrens' and dietetic nutrition will have increased by twofold and by 1990 -- by a factor of 2.5. The production of vegetable oils, sugar, confectionery goods, food concentrates and so forth will increase in large amounts. The production of non-alcoholic beverages, beer and grape and fruit and berry wines will be expanded.

The food program calls for an increase by a factor of 1.3 in the production of meat made from the raw materials of state resources in the RSFSR and Estonian SSR, in the BSSR -- by a factor of 1.6, the UkSSR -- 1.7, the Kazakh SSR, Lithuanian SSR and Kirghiz SSR -- 1.5 and in the Moldavian SSR -- by a factor of 1.7-1.8. The production of cheeses in the RSFSR will increase by a factor of 1.5-1.6, in the Kazakh SSR and Lithuanian SSR -- by a factor of 1.5, the BSSR -- 1.7, UkSSR -- 1.8 and in the Estonian SSR -- by a factor of 1.9. In the Kazakh and Uzbek SSR's, a considerable increase will take place in the production of whole milk products (by factors of 1.4 and 1.8 respectively). The production of fruit and vegetable canned goods in the UkSSR will increase by a factor of 1.5, the Uzbek SSR -- 1.7, Tajik SSR and Azerbaijan SSR -- 1.7, the Turkmen SSR -- 1.9, the Moldavian SSR -- a twofold increase, the Georgian SSR -- by a factor of 2.2 and by large amounts in the RSFSR. A sharp increase will take place in the production of vegetable oil in the RSFSR (by a factor of 2.5) and in the Turkmen SSR (a factor of 2.7), with considerable growth in such production also called for in the UkSSR (a factor of 1.4), Azerbaijan SSR (a factor of 1.5) and in some other republics. The production of granulated sugar will be increased at high rates (in the RSFSR by a factor of 1.9-2 and in the Ukrainian and Moldavian SSR's -- by a factor of 1.7). The plans also call for an expansion in the production of high quality grape wines and champagne in the Moldavian SSR and the development of the production of high quality brand wines and fruit and grape juices in the Georgian SSR and dry wines and champagne in the Azerbaijan SSR.

In accordance with the decree of the CPSU Central Committee and the USSR Council of Ministers entitled "Improving the Administration of Agriculture and Other Branches of the Agroindustrial Complex," approved during the May (1982) Plenum of the CPSU Central Committee, a single and orderly system is being created for the very first time for administering the agroindustrial complex, a system which will ensure rapid and proportional development for all of its subunits. One important task of the new organs of administration will be the correct selection, taking into account the zonal conditions and level of development of a region's economy, of both the forms for developing the agroindustrial complex and the specific forms for communications and interaction among its branch and functional subunits.

All of the activities of the agroindustrial complex must be subordinated to achieving the highest final results and the most complete satisfaction of the population's requirements for high quality products of agricultural origin. An important means for achieving successful implementation of the food program and raising the economic efficiency of agricultural production in the USSR and in each union republic is the decrees of the CPSU Central Committee and the USSR Council of Ministers, approved during the May (1982) Plenum of the CPSU Central Committee, entitled "Measures for Improving the Economic Mechanism and Strengthening the Economies of Kolkhozes and Sovkhozes," "Further Reinforcement of Kolkhozes and Sovkhozes With Leading Personnel and Specialists and Raising Their Role and Responsibility in the Development of Agricultural Production," "Measures for Intensifying the Material Interest of Agricultural Workers in Increasing the Production of Goods and Raising Their Quality" and "Measures for Improving the Housing, Communal-Domestic and Socio-Cultural Living Conditions of the Rural Population."

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## AGRO-ECONOMICS AND ORGANIZATION

### ORGANIZATION, FUNCTIONS OF KAZAKH APK RAYON LINK EXPLAINED

Moscow EKONOMIKA SEL'SKOGO KHOZYAYSTVA in Russian No 11, Nov 82 pp 53-55

/Article by A.G. Kramarenko, general director of the Fedorovka Production Association in Kustanay Oblast: "Agroindustrial Complex of a Rayon"/

/Text/ In terms of intra-oblast division of labor, Fedorovskiy Rayon in Kustanay Oblast appears as a large-scale producer of grain and animal husbandry products. Its proportion of the oblast's state grain procurements is 11.1 percent, meat -- 9.3 percent and milk -- 13.5 percent. Within the rayon there are 12 sovkhoses, 2 kolkhozes and one farm for the fattening of cattle. The overall area of agricultural land is 640,000 hectares, with 489,000 hectares of arable land.

During the 10th Five-Year Plan, the rayon's plan for grain production was fulfilled by 103 percent and grain deliveries -- by 101 percent. The five-year plan indicators for the production and delivery of animal husbandry products were fulfilled. All of the rayon's farms completed the five-year plan on a profitable basis. The average annual profit amounted to 16.55 million rubles.

For fulfillment of its tasks for the 10th Five-Year Plan and for the indicators achieved in 1980, the rayon was awarded the challenge red banner of the CPSU Central Committee, the USSR Council of Ministers, the AUCCTU and the Komsomol Central Committee.

The specific nature of the farms in the north Caucasus dictate definite conditions for administering production operations.

Recently, despite positive operational results, more difficulties have arisen in connection with ensuring a single management for those farms engaged in the production of goods and their partners, that is, those who provide services for the farms. This is affecting the rates of growth for output production and the level of profitability. For example, from 1965 to 1971 the level of farm profitability in the production of animal husbandry products decreased twofold and in 1981 it amounted to 26 percent.

In addition to the objective conditions underlying the growth in production expenditures owing to raised wages and the cost of fixed capital, spare parts and other material values, mention should also be made regarding the unproductive

expenses of farms engaged in the production of goods, which are associated mainly with shortcomings in the relationships being maintained with those branches which provide services and process the products.

For the purpose of creating a single organ of administration for agricultural production based upon a rayon trust of sovkhozes, a rayon production association consisting of 12 sovkhozes, 2 kolkhozes, a fattening point, a rayon veterinary station, a rayon veterinary laboratory, an agricultural chemistry enterprise, Sel'energo, an RSU /repair and construction administration/ for water supply and a rayon seed inspection was formed. The Fedorovka Creamery Plant, the rayon production association for production-technical support for agriculture and the Mobile Mechanized Column No. 14 of Kazmezhkolkhozstroy participate in the work of the production association in agriculture on a contractual basis.

Prior to the creation of the rayon association, the two kolkhozes were subordinate to the orgkolkhoz department of the oblast administration and the fattening farm -- to a trust of fattening sovkhozes. This separation in subordination adversely affected the organization of production, planning and wages.

Today the enterprises belonging to the association are subordinate to it and report to it on their economic and financial activities. The association's specialists furnish timely and practical assistance in the introduction of scientific and engineering achievements and leading experience, in improving the technology and in organizing agricultural production. Thus, with the aid of the association's specialists, a feed preparation shop was placed in operation at the Put' K Kommunizmu Kolkhoz and this promoted an increase in the productivity of the large-horned cattle. In 1981 the average daily weight increase in live cattle weight was 430 grams, compared to a planned level of 385 grams and the plan for beef production was fulfilled by 105 percent. The specialists are furnishing practical assistance to the farms in strengthening the logistical base and in improving seed production, the feed base and feed preparation.

Work is being carried out on the farms in connection with strengthening intra-farm specialization: departments have been established for the specialized raising of heifers and large-horned cattle and for milk production. The construction and modernization of facilities are being carried out in conformity with the established specialization of the departments.

A rayon seed inspection and a veterinary laboratory have been included in the association and are being maintained by means of the budget.

The Sel'energo Main Administration, the association for providing agrochemical services for agriculture and the RSU for water supply are operating on a cost accounting basis. Unfortunately, the inclusion of these organizations in the association's structure has not solve the problem of their relationships with the sovkhozes and kolkhozes. The leaders of these enterprises, for the purpose of fulfilling and over-fulfilling the plan established for them on a monetary basis, are not interested in reducing the expenditures for services. They do not bear responsibility for failure of the water supply or electric power systems or for equipment idle time. When these enterprises over-fulfill their plans, an increase takes place in the cost of products at the sovkhozes and kolkhozes.

The situation is aggravated by the fact that all of the contractual organizations are holders of capital and the sovkhoses and kolkhoses are fully dependent upon them. After receiving material funds for spare parts, electrical equipment and construction materials intended for the sovkhoses and kolkhoses, the partners use them in the most profitable manner, quite often to the detriment of the principal production operations.

Based upon the operational experience of the association, objective factors were established which tend to impede radical improvements in administration and in the production results of all elements of the rayon's agroindustrial complex.

This includes the following.

The existing standard statute for a rayon association for all practical purposes does not contain normative documents which expand the rights of the rayon organs of agricultural administration. It strengthens for the most part the existing system of relationships between the apparatus of the rayon agricultural association and other agricultural services of the rayon level, departmentally subordinate to the republic's ministry of agriculture.

The organizations within the association retained their existing system of planning and financing and administrative subordination to a higher department.

In this regard, the association cannot centralize the principal administrative functions -- planning, accounting and control over the activities of these organizations. The association provides complete management only for the agricultural enterprises -- sovkhoses and kolkhoses.

The normative documents which regulated the activities of the association's structural units have not been revised. The existing systems for awarding bonuses and issuing wages have been retained. The association's council is not authorized to influence the table of organization of its structural subunits, redistribute the wage fund and so forth.

All of these conditions lower the operational effectiveness of the association, lead to a dispersion of personnel and resources and alienate the activities of the enterprises and organizations of the rayon's agroindustrial complex.

In Fedorovskiy Rayon there are 11 rayon organizations and enterprises having a detached administrative-managerial and production staff, all of which are subordinate to the Ministry of Agriculture for the Kazakh SSR.

Each of these organizations has a leader and a majority of them have agricultural specialists (agronomists, zootechnicians), economists, bookkeepers, cashiers and typists. It is our opinion that centralization of the branch planning-economic and bookkeeping-accounting services and the financial resources of these organizations will promote improvements in the administration of agricultural production. Departments or administrations can be created on the association's staff for farming, animal husbandry, mechanization and electrification, production planning and so forth. All of this will make it possible to improve control over a small number of isolated organizations.

In connection with the inter-departmental functions of the veterinary service, it should retain its separate autonomy, as required within the limits of existing veterinary legislation. The rayon Sel'khozkhimiya Association, keeping in mind the modern production situation which exists in Fedorovskiy Rayon, is unable to carry out its assigned tasks. The scales of the rayon's agricultural production are great and the organization's potential small. Thus all functions concerned with the application of fertilizers are retained by the sovkhozes and kolkhozes. In the opinion of the rayon's specialists, this service must be included in the agricultural department of the rayon association and it must ensure the timely ordering and deliveries of fertilizers, their timely storage and correct utilization. The farms must have chemical resource stations which must be subordinate to the chief agronomist and within the rayon there must be a base for ensuring the timely unloading of the mineral fertilizers and their partial storing and transporting.

In our opinion, the successful operation of the Sel'energo enterprise requires the creation of a production base for the repair and technical servicing of electrical units and equipment. However, this base must not be isolated from the rayon Goskomsel'khoztekhnika Association but rather integrated with it.

The rayon Goskomsel'khoztekhnika Association is a large partner of agricultural production. The association is concerned with logistical supply for the farms, the technical servicing of equipment and with the recultivation of land.

A large part of its work has to do with trade and supply activities. Many claims testifying to its unsatisfactory operations are presented against the Goskomsel'khoztekhnika Association. During the years of the 10th Five-Year Plan, the expenses for equipment repair work increased by 1.7 million rubles and the expenditures for cultivating 1 hectare of grain crops -- by 10 rubles, including 3 rubles for repair work. Under our conditions, involving an area of 360,000 hectares of grain crops, this represents an expense of more than 1 million rubles. Quite often Goskomsel'khoztekhnika does not supply the farms with spare parts, thus forcing them to turn their engines in for exchanges prematurely.

Many examples of premature replacement of engines could be cited. It was by no means an accident that in 1980 the rayon's sovkhozes and kolkhozes spent 3 million rubles for tractor repair work and in 1981 -- 3.21 million rubles. Under our conditions, the rayon association of Sel'khoztekhnika should be subordinated to a rayon production association in agriculture as a logistical supply department for sovkhozes and kolkhozes; it should be headed by a Sel'khoztekhnika manager, with the authority of deputy general director of the association. The concentration of the production and supply functions in the same hands will eliminate the existing interdepartmental conflicts.

Within the rayon there is an inspection of the Kazakh SSR Ministry of Procurements with responsibility for the procurements and quality of the agricultural products. It consists of five individuals. This inspection does not possess any material resources, nor does it have sufficient authority for influencing production operations. Its role in the rayon is mainly of an agitational-explanatory nature. For the purpose of expanding the authority and active influence of this inspection

on the activities of sovkhoses and kolkhoses, it should also be included in the structure of the rayon production association, with the rights of a department for the sale and quality of agricultural products.

A solution has still not been found for the question of the relationships of sovkhoses and kolkhoses with procurement organizations on the territory of the rayon or with a creamery plant or grain receiving points. Conflicts often arise between the economic experts and procurement specialists owing to the primitive methods employed for determining the quality of the products being accepted and also because of inadequate acceptance conditions.

In order to organize centralized freight shipments for a rayon association, there must be a motor vehicle base equipped with a complete set of machines and mechanisms for the loading and unloading of freight. In our opinion, the agroindustrial complex must encompass the entire cycle of control, from the production of the goods to delivering it to the consumers. All participants in the agroindustrial complex must be interested in increasing the quantities of products, raising their quality and reducing expenditures.

The effectiveness of administration is dependent upon the qualifications of the personnel. In our case, we are experiencing a shortage of middle echelon personnel. One reason for this -- low wages of middle echelon specialists in the rayon association.

We believe that a solution for the problem of creating an agroindustrial complex within the framework of a rayon will make it possible to improve considerably the administration of agricultural production and to carry out the tasks assigned to the agricultural workers.

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## AGRO-ECONOMICS AND ORGANIZATION

### REVIEW OF FOOD PROGRAM GOALS, RECOMMENDATIONS OFFERED

Moscow PLANOVoye KHOZYAYSTVO in Russian No 8, Aug 82 pp 32-42

[Article by N. Borchenko, chief of the agricultural department of the USSR Gosplan: "Agriculture--The Basis for Solving the Food Problem"]

[Text] The General Secretary of the CPSU Central Committee, L.I. Brezhnev, stated in his speech at the May 1982 Plenum of the CPSU Central Committee that agriculture is the basis for solving the food problem.

Resources for the production of food are at present generated in three sectors of the nation's economy: agriculture, fishing, and forest. The land and the waters (the sea, rivers and lakes) are almost the only sources of food.

For sure we would like to see a greater catch of fish from the seas, rivers and lakes and also an increase in the yield of nature's products; however, the yields from the game and fishing sectors will eventually begin to decrease so as to not create an imbalance in nature.

In the near future, therefore, agriculture will be a more promising and dependable source of production for food; out of all producing sectors, its output is most significant. Agriculture produces more than 80 percent of the food protein of animal origin and an even greater percentage of protein from plants. Figures indicate that food products and raw materials for their production make up 91-92 percent of the gross output of agriculture. The remaining products--wool, hides, flax, cotton, silk and others--are necessary in the production of such goods as fabrics, clothing and footwear. For these goods there is a large demand. Almost 75 percent of plant production and 93-94 percent of animal production goes into food.

Feed produced by the agricultural sector is the raw material necessary for high-grade food products from animals. It makes up 13-15 percent of the gross output from plant production.

Agriculture is subdivided into the animal and plant sectors. The need is becoming more apparent to make feed production a separate sector with its own planning mechanism. This is because of the absolute necessity of providing for the higher growth rates for animal products, inasmuch as the



feed supply is an intermediate step in the production of food. The livestock industry in turn far surpasses the amount of non-food protein and energy from feed in the following valuable food products: meat, milk and eggs. Each one of these sectors has its own complex structure.

The specific share of total plant output for various crops is now the following: grains, about 25 percent; potatoes, 13 percent; vegetables and squash, more than 10 percent; fruit, berries and grapes, about 10 percent; sugar beets, about five percent; oil-yielding plants, two percent. For gross output of animal products, meat from livestock and poultry makes up 55-56 percent; milk, about 27-28 percent; and eggs, eight-nine percent. Each agricultural subsector satisfies the consumers' demands in one variety or another as food products or as material for food production.

All agricultural subsectors are mutually dependent. The Food Program has set for each of them specific goals and tasks and the means for their fulfillment. The average annual production of grain is to be increased during the 11th Five-Year Plan to 238-243 million tons, during the 12th to 250-255 million tons; meat (slaughter weight) to 17-17.5 and then to 20-20.5 million tons; milk to 97-99 and then to 104-106 million tons; and eggs to 72 billion and then to 78-79 billion.

These goals will be reached by increasing feed production to 500 million tons by 1985 and to 540-550 million tons by 1990.

Production of vegetables and squash is to reach 33-34 million tons in the 11th Five-Year Plan; fruit and berries 11-12 and then 14-15 million tons. There will also be an increase in the production of grapes, potatoes, sunflowers, sugar beets and other vegetables. This means there will be a greater variety of food products.

By attaining the planned production outputs of the Food Program for agriculture and the livestock industry, there will be a significant increase in the supply of these products to the consumer. Comparing per capita consumer demands in 1990 with those of 1980, there will be an increase of 12 kg for meat and meat products, 16-26 kg for milk and milk products, 21-27 more eggs, 29-38 kg for vegetables and squash, 28-32 kg for fruit and berries, and also an increase in the demand for vegetable oil and sugar.

Therefore, the Food Program incorporates the main goal of the Party: a dependable supply of food and a reduction in the gap between supply and demand for certain food items.

Food products make up about 50 percent of the goods in commodity circulation. The Food Program envisages not only an increase in the amount of food products in commodity circulation but also a substantial improvement in their quality. This is aimed at increasing the sale of products with a higher demand, especially meat. Therefore the production of meat is to make up 60 percent of the gross output from the livestock industry.

The Decree of the May 1982 Plenum of the CPSU Central Committee emphasizes the necessity of greater output of all agricultural sectors and development of the agro-industrial complex in general. At the present time agriculture can only develop in close cooperation with the following industries: tractor-machinery, chemical, construction and transport.

The various sectors of the agro-industrial complex are increasing the supply to farm areas of technology, machinery and equipment, fertilizer, means of crop protection, commercially-produced feeds; they are also increasing the construction of production facilities, housing, cultural and social facilities, and rural roads.

As a result, the basic productive resources in agriculture will increase by a factor of 1.5, energy resources by a factor of 1.6, the supply of fertilizer by a factor of 1.7; the share of construction work carried out by contract will also significantly increase.

The material base on the farm has been increasing yearly because of the work of the various agricultural sectors. By 1990 the number of tractors will increase to 3,020,000 and the total horsepower will be 970,000,000; the amount of electricity available to agriculture will be 210-235 billion kilowatt-hours, and the value of agricultural resources will be R360 billion. The supply of fertilizer will reach 30-32 million tons, and the area of cleared land will be about 41-44 million hectares, of which 23-25 million will be irrigated.

By 1990 the complex mechanization of both farming and the livestock industry is to be completed; these sectors will be equipped with new technology.

33-35 percent of capital investments in the economy and 27-28 percent of the investments in agriculture will be used for the development of the agro-industrial complex and for its material and technical base during the 12th Five-Year Plan.

There is also to be a further development of those sectors that process food products and are also responsible for procurement, storage, selling and transportation.

The complex processing of food products must also use technology that has no waste products. They must also have better packaging and packing materials; this will decrease product losses. This source for increasing the use of food products is still not fully utilized. The efforts of the entire agro-industrial complex must be directed at the removal of bottlenecks at each point in the food chain from field to the workers' table. The basis for this is an optimal amount of harvest machinery, combines for grain, potatoes, feed and other products, specialized transport, a better supply of equipment at storage facilities, and also machinery for the processing of grain, sugar beets, vegetables, fruit, berries, grapes, potatoes, meat and milk.

The five-year plan will see the use in agriculture of 3,740,000 tractors, 1,170,000 grain combines, 3.0-3.06 million trucks and many similar machines.

There will be 1.10-1.16 million milk transports and 50-53,000 semi-trailers for hog transportation on kolkhozes and sovkhoses specializing in meat and milk products. Sectors of the agro-industrial complex and general transport will receive 76-78,000 refrigerator vehicles, 29-30,000 refrigerator-isothermal railcars, and an increase in the number of river barges for vegetable transportation. The demands of agriculture for packaging and packing materials will be more fully satisfied; this will permit 60-70 percent of food products to be packaged.

R15-17 billion will be allocated during the five-year plan for equipment for food sectors of industry, national trade and consumer cooperatives. There will be large-scale construction of facilities for the storage and processing of food products. Resources for constructing and equipping these facilities will be increased by a factor of 1.6. The demand for storage facilities will be met--storage for grain and fruit--by 1990, and there will be a significant increase available for vegetables, potatoes and feeds.

The following are all contributing towards a realization of these goals: food programs of republics, krais, oblasts and rayons; plans of sovkhoses and kolkhozes, secondary farms of industrial enterprises; and the measures undertaken by ministries and departments.

The development of the Food Program also has a very important external aspect. It bears witness, first of all, to the fact that our country, as in the past, is concentrating its material and financial resources on the more peaceful and noble task of increasing people's welfare. Secondly, the fulfillment of the Food Program will allow us to decrease food imports and, consequently, to increase our independence in food production, thereby freeing up additional hard currency reserves for the acquisition of licenses for new technology, machinery and equipment.

Agriculture is the core of the agro-industrial complex. Its demands for capital investment and material resources must serve as a basis for the plans of other sectors of the economy. These plans must produce excellent final results for the entire complex.

The all-out effort to intensify agriculture and the livestock industry is connected with the growth of those factors responsible for sustaining increases in agricultural production: chemicals, land clearance, mechanization, and a more rapid industrialization of the livestock industry. The Food Program foresees increasing productivity from every hectare of land, this as a result of increased fertility owing to a greater use of organic and mineral fertilizers, the use of chemicals to maintain plants, better use of machinery and technology, clearance of land, the zonal system of farming, use of the natural features of each region, the introduction of selection and seed-breeding, and the use of the best farming practices. All of the above will permit an increase in the main indicator for the intensification of agriculture, crop yields as well as milk output per cow and the size of procured animals.

The current decade will see an increase in grain yields to 5-7 quintals per hectare and 21-22 quintals by 1990; in beet yields to 68-70 quintals; sunflower, 5-6; vegetables, about 40; milk yield per feed cow to 500-600 kg; and the average weight of young cattle procured by the state to 400-500 kg; an increase in the delivery weight of hogs and also an increase in poultry production. Agricultural productivity per hectare will increase by at least one-third and labor productivity on kolkhozes and sovkhozes by a factor of 1.5. The growth rate for material resources during the 11th and 12th Five-Year Plans will still be lower than in the previous decade.

Figures indicate that a one percent increase in production will occur even with lesser amounts of capital investment, fertilizer and energy. So the growth of capital investment during the 8th Five-Year Plan and during the 9th amounted to 61 percent, during the 10th to 32 percent, during the 11th to 10 percent, and during the 12th to 12 percent. During the 9th Five-Year Plan a one percent increase in gross output came as a result of a 5.0 percent increase in mineral fertilizers and a 3.1 percent increase in energy; during the 10th the corresponding figures were 3.4 and 4.0 percent, during the 11th 1.9 and 2.7 percent, and during the 12th 1.8 and 1.8 percent. The absolute growth of capital investment, machinery and fertilizers is decreasing or staying about the same.

Under these conditions the successful realization of the Food Program demands the complete use of the sector's existing productive potential. From the point of view of resource use, this is the main thrust of the Program.

The economical and judicious use of each ton of mineral fertilizer, fuel, feed, each ruble of investment, each hour of the working day, the increased use of machinery and equipment--these are all additional sources, reserves for increased food production. So output from the use of fertilizers and chemicals must increase 12-15 percent, which is the same as an additional four million tons (nutriment matter).

Better feeds, better protein and nutritional content, and a more rational use will allow for a significant decrease in the amount of feed per unit of animal product, about 5-7 percent; this translates into a savings of about 27-38 million tons.

The Program foresees a decrease in the use of fuel for field work and transportation of not less than five percent and an increase by 1990 in the daily productivity of tractors, harvesting machinery and transport vehicles of about 20 percent. Efficiency will lead to the attainment of the Food Program's goals.

A rational use of machinery, fertilizers, land, especially cleared land, and a reduction in incomplete production--these are additional reserves for conserving material resources and increasing production.

Machines at the present time are frequently used beyond what specifications call for, as a result of which the number of machines grows slowly and, in turn, there is a poor supply of them to kolkhozes and sovkhozes. During the 10th Five-Year Plan farms were supplied with 1,820,000 tractors, and yet the

number of them increased by only 162,000; the numbers for combines were 539,000 and 42,000. The daily output per tractor increased by four percent, while the output per grain, feed and potato harvester remained practically the same. Here is certainly something to be considered by directors of the engineering works of the State Committee for Supply of Production Equipment for Agriculture, the USSR Ministry of Agriculture, kolkhozes and sovkhoses, and also workers in the machinery industry.

It is also necessary to use chemicals effectively and to decrease losses at every step, from factory to field. Use of mineral fertilizers was effective on lands sown with grain during the 10th Five-Year Plan. For each ton of fertilizer applied, 4.9 tons of grain were received as opposed to the predicted 4.4 tons. However, for sugar beets, flax, potatoes, fruits and cotton, the increases in production still don't reach planned compensation levels.

Therefore it is up to workers of planning organizations and specialists of agricultural departments and the reestablished chemical service agencies to work out ways of using chemicals effectively and increasing soil fertility.

Particular attention must be given to existing milk-producing centers now operating at a projected capacity of 66-70 percent; also to cattle-feeding centers which now are operating at 72 percent of capacity.

Significant reserves are also to be found in the better use of land, especially cleared land. Fluctuations in agricultural output on these lands is still great.

Perfecting the system of capital investment and the expenditure on food production must yield large results. There is to be a gradual transfer from long-term to short-term investments, that is, from expenditures on basic production resources (equipment, productive livestock, machinery) to a growth of working capital for seed, fertilizers, pesticides, feed.

Better use of the existing and the reestablished working capital funds with a moderate growth in basic production expenditures, stabilization on sown lands, and an increase of livestock where this is possible--all of this is the basis for the necessary growth rates in agricultural production.

During the 11th and 12th Five-Year Plans there will be policy changes in capital investments, a shift in the proportion among oblasts in which investments are made, and greater emphasis on social concerns. Financial and material resources, efforts of the construction industry and of contracting organizations are being directed at the social reorganization of the village.

In the first instance, capital investments are being directed toward construction of non-producing establishments. If capital investments for agriculture during the 11th Five-Year Plan will be 10 percent more than during the 10th Five-Year Plan and again 10 percent more for the 12th as compared to the

11th, then the total investment for construction of non-producing establishments will increase by a factor of 1.4. This sector will receive 20 percent of the funds for agricultural construction during the 11th Five-Year Plan, 26 percent during the 12th (15 percent during the 10th). These figures indicate that a decisive plan has been initiated for rural reorganization. And in accordance with the following decree from the CPSU Central Committee and from the USSR Council of Ministers, "Ways to Improve Housing, Service and Social Conditions of the Rural Population", soviets of ministers of the various republics can channel up to 10 percent of the capital investment funds delegated to non-producing construction in cities for the building of homes and social institutions on poorer kolkhozes and sovkhoses. The Decree foresees the use of up to 15 percent of productive capacity of urban home construction companies for the building of homes, schools and preschool facilities on these farms. By 1990, 75-80 percent of rural construction and assembly work will be done by contract.

This will favor the construction of non-producing establishments in the country. There will be an expansion of the entire array of social and domestic establishments.

During the 11th Five-Year Plan 176 million square meters of living space in houses will be made available (during the 10th, 145 million and during the 12th, more than 200 million); for the decade this means 6.2 million apartments for about 26 million people. Every fourth family engaged in agriculture will either receive an apartment from the public supply or will be able to build a home with their own money.

General living space for a rural family will, according to preliminary figures, increase from 13.9 square meters in 1980 to 16.3 square meters by 1990. Therefore the goals outlined in the above Decree will aid in resolving a much more difficult rural problem, that of improving housing for rural workers.

It is also necessary to pay greater attention to individual and cooperative construction in rural areas; supply organizations have the obligation of providing them construction materials. Planning, agricultural and trade organizations must see to it that individual builders have all the necessary materials. The desire to build must be encouraged in every possible way and supported materially. Kolkhozes and sovkhoses should themselves bear part of the expense and concerns. For whoever builds a home is thinking of the future and is tying his life up with agriculture. New homes must be well-planned and have all the conveniences. Young people will be happy to live in them.

The level of services for rural housing is still low. The following goal has been set: by 1990 to complete work on central water and gas supply and on plumbing for the majority of centrally-located farm homes on kolkhozes and sovkhoses.

In order to keep the large rural economy working smoothly, specialized services for the communal economy must be more decisively created. As the experience of many kolkhozes and sovkhoses has shown, the systematic working

of such services will help maintain rural lines of communication and keep villages in good order.

There is still another serious problem, that of preschool institutions in rural areas. At the present time there is room for 2.8 million children in such institutions; the supply meets 34 percent of the demand. Toward the end of 1980 the number of preschool institutions will double, their supply then equalling about 67 percent of demand.

Construction continues on general education schools. During the decade room for almost 3.5 million students will be made available in such schools and for 430,000 students in rural vocational schools.

Construction on social institutions is also expanding. While in 1980 there is room for 3.5 million people in clubs and Palaces of Culture, during the decade this figure will be increased to 3.7 million.

Medical service is also being improved and expanded: both the number of health facilities and the types of medical services.

The social reconstruction of the village is the most important task for the government and for the people. The fulfillment of the complex program to transform the village is impossible without increased attention of construction ministries to the needs of rural building. The marked development of rural construction, of the rural construction industry, especially rural building firms--all of this is absolutely necessary. But increasing the pace of rural construction is a matter not only for the appropriate ministries but also for the kolkhozes and sovkhozes themselves.

This means that we must reorient sponsorial assistance to the village in order to resolve the social development issues: the building of roads, housing, facilities for entertainment, preschool institutions, means of mechanizing labor. But the main attributes of such development must be steadiness, constancy and long-term work.

All key questions of the social reorganization of the village have been put forth in the Food Program and its subsequent decrees. The task is now to work out and implement in each kolkhoz and sovkhoz, in each rayon, oblast and republic, those specific complex programs for the social development of collectives of rural enterprises.

As stated in the Food Program and the Decree, the decisive means for improving living conditions and life of rural workers are part of a program, and this is the main thrust of the Party's agricultural policies in this era. This program will also facilitate the attainment of the goals as stated at the May Plenum of the CPSU Central Committee for a reliable food supply.

Significant structural changes are to be found in the producing sector. Here capital investments are to be made in the following areas: improving soil fertility, increasing the output of plant products, in particular of feeds, and also increasing the output from the livestock industry; improving the

consistency of production; improving methods for product preservation and quality, the material basis for storage, expansion of primary processing and packaging of food products; using material resources (fertilizer and feed) in an economical and rational way; and the technical supplying, resupplying and reconstruction in agriculture, the procuring of machinery and equipment.

There will be an even greater emphasis on road construction. Roads, the most important arteries for agriculture, are given particular attention in the Program. Capital investment for road construction during the decade will increase by a factor of about 2.6 and will total R12.3 billion. Poor roads create formidable problems, are responsible for product spoilage, hinder machinery, material resource use, and the entire production operation of kolkhozes and sovkhozes. They also decrease the proximity of residence to the work place of rural and city dwellers and make it more difficult to have a dependable rural labor force. Therefore, the demands of road construction are of utmost importance and cannot be put off. Progress in this area cannot occur without active participation of road building firms.

Improvement of living conditions in the village and in the countryside depends on initiative and determination of villages and rural soviets, kolkhozes and sovkhozes, their directors, and all who live in the countryside.

The Food Program is directed at kolkhozes and sovkhozes, planning and economic bodies of rayons, oblasts and republics for a more effective use of capital investments. This must be adhered to at all levels of planning and administration.

The main way to increase food resources is to fully develop all categories of farms: sovkhozes and kolkhozes in the public sector, private plots of workers and administrators on these farms and of all those living in rural areas; the secondary farms of industrial and trade enterprises and organizations. It is also necessary to make more use of collective gardening and truck farming for the supply of vegetables, fruits, berries and potatoes.

All of these various types of farms, given the present state of social conditions in the village, must be developed, working together and supplementing one another. The basic directions for the development of these types of farms are given in the Food Program, although most of the attention there is given to the development of collective agriculture, the kolkhozes and sovkhozes. This is the decisive sphere. Maximum concentration of material resources are devoted to the basic sectors of agricultural production, the kolkhozes and sovkhozes. This is the basic operating principle of planning and economic institutions. And it must be kept in mind that all administrative institutions in the agricultural sector are created for and work for maximum efficiency of the farm units, not the other way around as has happened in several instances.

During the past several years, after policy changes had been made for the development of private and secondary farms of kolkhoz and sovkhoz workers and administrators, there is now an increase in the holdings of cows and cattle, hogs and sheep; there are also more families engaged in gardening and truck farming.



In spite of unfavorable weather conditions, the holdings of cattle increased from 1980 to 1981 to 130,000 head, of which there are 120,000 cows; sheep increased to 570,000.

The number of families that have collective gardens increased from 4.9 to 5.2 million, while those engaged in cooperative truck gardening grew from 4.1 to 4.6 million. These figures bear out the fact that people are supporting the Party's plans for the development of such forms of agriculture. At the present time almost 26 percent of gross agricultural output comes from private secondary farms. Percentages for the following products are: meat, 31 percent; milk, 30 percent; eggs, 32 percent; vegetables, 33 percent; fruits and berries, 56 percent; potatoes, 64 percent.

There are a series of measures for the establishment and improvement of the secondary farms of enterprises, organizations and institutions. From 7,400 in 1978 their number grew to 12,200 in 1980 and continued to grow in 1981. During that time production of grain on these farms increased by 21 percent, potatoes by 27 percent, vegetables by 13 percent, livestock and poultry by 56 percent, milk by 10 percent, and eggs by 7 percent. Ministries and departments greatly expanded this work. But local organizations for the establishment of these farms have not allocated land in all instances. And many enterprises and organizations are setting up livestock farms and expect to receive feed from government holdings. This is not correct. The point is that these farms should use local resources, feed and supplemental reserves.

One of the goals for agriculture set forth in the Food Program is, on the basis of increased food production, to gradually decrease food imports from capitalist countries and to create a strong and reliable basis for food independence.

This goal is not easily attainable, as our country's agriculture is carried out in very unstable climactic conditions. Extreme fluctuations in the yields of grain, feed and other products on a fixed amount of arable land cause large variations in yield of agricultural plantings, especially of grain, two-thirds of which is planted in areas of unstable climate. Maximum output variance from an average to a poor harvest was 19 percent during the 7th Five-Year Plan, 12 percent during the 8th, 26 percent during the 9th, and 11 percent during the 10th. Under such conditions it is very difficult to expect a steady performance from agriculture without having sufficient reserves. Therefore a series of measures to ensure stable production is an important task for planning and economic institutions.

Stability in agricultural production must be ensured by several interrelated steps: more independence given to farm directors and specialists in their solving of technical and operational problems in agriculture; more intensified production, a more rapid deployment of machinery and technology (that is, more high-production machinery, land clearance and use of chemicals on the land, introduction of a zonal system of farming, fallow fields, planting of drought-resistant crops, etc.); the setting up of inner-sector territorial and government reserves of food, feed and other resources.

These steps are outlined in the Food Program and in related documents.

In our view the time has come for legislation from all levels of planning and administrative bodies to set up and work out a flexible and dependable system for supplies and reserves of feeds and food based on local conditions.

The following are important implementing measures of the Food Program: perfecting production interrelationships, the economic mechanisms of agriculture, the planning and management of the entire agro-industrial complex; strengthening the role of economic factors--prices, profits, credit, the self-financing aspects of enterprises, economic stimulation; increasing production and everything else that can be considered part of the "agricultural mechanism." The Food Program and its related documents contain all of the above points.

Of particular importance among the documents emanating from the Food Program is the Decree entitled "Ways of Perfecting the Economic Mechanism and Strengthening the Economy of Kolkhozes and Sovkhozes." It is the unanimous opinion of economists and directors of farms, ministries and departments that it will greatly improve the economic state of kolkhozes and sovkhozes and facilitate the plans of farm directors, specialists, all sovkhoz and kolkhoz workers for profitable operations. It will also lessen the lackadaisical attitude of certain directors. The guiding principle of all these measures is to gradually make all the production activities of enterprises self-paying ones.

L.I. Brezhnev noted in a speech at the May 1982 Plenum of the CPSU Central Committee that "Increased agricultural efficiency is impossible without stable economic conditions for a genuine, not artificial, self-financing system."<sup>1</sup> Many kolkhozes and sovkhozes now sell meat, milk, beets, vegetables, potatoes at a loss.

1980 was not a very productive year for agriculture. There were losses on many kolkhozes and sovkhozes, especially from the sale of animal products to the state.

It is not just a matter of procurement prices but also of carelessness and unfinished work on the part of these farms. We must say, however, that procurement prices for basic products, especially for livestock, are not sufficiently high to cover costs of production, and farms are suffering losses from sales.

This situation, of course, will not bring about increases in production and will not facilitate the self-financing interrelationships between farm, trade and processing sectors. In order to put an end to financial losses, starting on January 1, 1983 procurement prices will be raised for the following

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1. "The USSR Food Program Until 1990 and Implementing Policies", Moscow, Politizdat, 1982, p. 18.

commodities: cattle, hogs, sheep, grains, sugar beets, potatoes, vegetables and other agricultural products. There will also be price increases on products received under poor growing conditions and from unprofitable or low-profit farms. R16 billion will be allocated annually for this fund.

Farm profit is not an end in itself but rather a means to foster intelligent farming, the profits being used to finance expansion and improvement of the enterprise, to create reserve holdings for material stimulus and social-cultural undertakings, also to keep the enterprise from seeking government help so often.

Many farms are profitable and do not seek government credits. Their economic base is stable.

The new prices have not yet been announced, but preliminary figures indicate that once they are in effect the production profitability will markedly change for all types of previously unprofitable commodities. So profitability from the sale of agricultural products will increase from 10 to 27 percent based on the plan for 1982. The Decree also promulgates a series of other important economic measures: debt reduction and an extension of terms, a greater income tax differential which depends on the levels of profit, financing of expenditures on unprofitable or low-profit farms, expenditures for home construction, roads, preschool institutions, clubs, and other domestic-social institutions. The total sum to be spent on revitalizing the farm economy, introducing self-financing principles and enterprise management principles into the production sphere, providing for a stable work force, and stimulating agricultural production--this sum will be more than R30 billion.

The extent of these measures, touching absolutely each and every kolkhoz and sovkhoz, was indicated by L.I. Brezhnev in his speech to the Plenum of the CPSU Central Committee; taken together they constitute the strongest possible political-economic policy.

Without a doubt, these firm economic measures will play a significant part in increasing the production of food and in improving farm economy.

The Food Program together with related decrees is aimed at expanding production in the following ways: giving financial motivation to specialists and directors on kolkhozes and sovkhozes, to all agricultural workers; perfecting management and farming techniques; speeding up the development of the village social structure; organizing ways to ensure a reliable work force in the livestock industry. All of these should be prominent in increasing the production of food already in the next year.

In his speech, L.I. Brezhnev said that "The Food Program will promote goals of varying terms, long, intermediate, short and most urgent."<sup>2</sup> Work in 1983 will concentrate on the short-term and most urgent goals, while the conclusions and statutes as well as the Food Program itself will formulate plans

for next year and the coming years of the 11th Five-Year Plan.

The plans must point the way to efficiency and a proper balance of all sectors, to additional reserves and capabilities inherent in agriculture.

Success of the Food Program will have a decisive effect not only on the development of agriculture and related sectors but also on the development of the entire economy.

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2. Ibid., p. 15.

## AGRO-ECONOMICS AND ORGANIZATION

### GUARANTEES FOR PRIVATE PLOT SECTOR RECOMMENDED

Moscow KHOZYAYSTVO I PRAVO in Russian No 11, Nov 82 pp 19-23

/Article by G. Bystrov, candidate of legal sciences: "Agricultural Reserves"/

/Text/ The private plots are a component part of the economic system of our state. The local soviets of people's deputies, kolkhozes and sovkhoses are obligated to furnish assistance to citizens in the management of these plots. But is proper concern being displayed in all areas for strengthening these rural yards and increasing the products being produced on them? Unfortunately, this is not the case. This is why a need has arisen for discussing those problems associated with legal support for the development of the private plots of citizens and raising the role they play in fulfilling the USSR food program. Experience has shown that the norms for land legislation occupy an important place in this great and important work. In particular, they call for special measures aimed at improving field fodder production and natural lands and organizing the production of feed on an industrial basis. Strengthening of the feed base, including that for the private livestock of citizens, is inseparably associated with the intensification of farming and the rational use of lands not only of an agricultural nature, but also the state reserve, the forestry fund and industrial, transport and other enterprises and organizations.

The norms for land legislation impose upon farm leaders the obligation of displaying concern for the rational use of the private plots and drawing into the crop rotation plans those free areas formed as a result of the regulation of land utilization.

The 15 January 1981 Ukase of the Presidium of the USSR Supreme Soviet, which introduced changes into Articles 25 and 27 of the Principles of Land Legislation of the USSR and union republics\*, is creating the conditions required for providing those livestock and poultry with feed that are being maintained on the private plots. The ukase confirmed the earlier statute which held that tracts of land for haying and for the grazing of livestock are presented not only to kolkhoz members and sovkhos manual and office workers who conscientiously fulfill their labor obligations in public production, but also to other citizens who are residing in the rural areas and who are maintaining livestock and poultry.

The land legislation presently in force is promoting the use of additional feed resources for the private plots by calling for the owners of livestock and poultry

\* VEDOMOSTI VERKHOVNOGO SOVETA SSSR, 1981, No. 3, p 75.

to be presented with tracts of land for the cultivation of forage crops. Moreover, an agricultural tax for these tracts of land is not collected from them.

The legislator does not standardize the amount of land made available for the grazing of livestock, for haying operations or for the cultivation of forage crops. The solving of this problem falls within the exclusive competence of the organs of intra-farm administration of kolkhozes and sovkhoses which, taking into account the specific conditions, establish the periods and norms for the use of the tracts by kolkhoz members, manual and office workers and other citizens.

In the presence of adequate areas of natural haying lands, the tracts for haying operations are divided up by the kolkhozes and sovkhoses based upon the feed procurement norms for the livestock. Thus the regulations for the Kolkhoz imeni Kuybyshev in Sedel'nikovskiy Rayon in Omsk Oblast call for the kolkhoz members to be presented with haying lands for procuring hay for feeding to the livestock at the rate of up to 30 quintals per cow, 15 quintals per head of young large-horned cattle stock and 5 quintals per head of sheep or goat. The efficient determination by the kolkhoz regulations of the norms for allocating feed for the livestock serves to guarantee the rights of citizens with regard to the maintenance of private plots.

In regions where there is very little natural haying land, the owners of livestock are issued coarse and succulent feed either for a fee or on a gratuitous basis. If they are assigned tracts which are located in kolkhoz or sovkhos forests or on lands of the state forest fund (for the grazing of livestock or for haying operations), they can be assigned obligations associated with the planting of trees and the tending of forest plantings. For procuring hay for their privately owned cattle, citizens can be provided with forest-park lands, roadside strips and unsuitable and other types of land. The use by the kolkhozes and sovkhoses of these rules, which tend to strengthen the requirement for utilizing additional land resources, is receiving the support of the local party, soviet and agricultural organs.

In the interest of ensuring that the private livestock are supplied with feed, the norms of agricultural legislation call for grain and grain waste products to be issued to kolkhoz members and sovkhos manual and office workers in the form of wages. The Model Regulations for a Kolkhoz (Paragraph 37) also presupposes the possibility of creating a natural fund for grain and other products, for issuing in the form of wages or for sale to kolkhoz members. A definite proportion of the gross yield of grain and other products, which are issued in the form of a guaranteed wage, serves as a source for the formation of the mentioned fund. The sale of agricultural products to kolkhoz members, at prices determined by the kolkhozes themselves but no higher than the existing state procurement prices, is carried out in the manner called for during a general meeting (meeting of authorized representatives).

The norms of local statutes dealing with wages at kolkhozes and sovkhoses call for payments in kind for the cultivation of labor-consuming crops. For example, the Novaya Zhizn' Kolkhoz in Nesvizhskiy Rayon in Minsk Oblast employs the practice of allotting the seed of the kolkhoz members to citizens who reside in the rural areas for those tracts of land on which the farm grows fodder beets and flax. In such instances they are obligated to tend the plants and harvest the crop on up to 0.5 hectares of fodder beets and up to 0.5 hectares of flax. The material interest of the kolkhoz members and other citizens in the final results ensures that they are authorized (in addition to payments for the products grown) to use haying tracts of

up to 0.10-0.15 hectares sown in perennial grasses and also to purchase coarse feed at a favorable price.

The May (1982) Plenum of the CPSU Central Committee directed attention to the need for eliminating those shortcomings associated with underestimating the importance of payments in kind in agriculture. In this regard, the need for expanding the practice of such payments has been recognized. Thus the plans call for the allocation (free of charge) of grain to those individuals engaged in the cultivation of grain crops, in the amount of up to 15 percent of the above-plan gross yield for a brigade (team). The issuing of grain and other agricultural products in the form of wages is carried out not only for agricultural workers but also for citizens who participate in harvesting the crops or in the carrying out of other types of agricultural work.

In connection with the development of legal measures in support of the USSR food program, we are of the opinion that a greater guarantee should be provided for the rights of citizens to maintain private plots. Kolkhoz and sovkhos leaders must display greater responsibility in connection with carrying out their obligations for providing assistance in this regard. For example, incidents in which citizens are forbidden to use unproductive (neglected) lands for haying and cattle grazing purposes or they are provided with haying tracts at a late date (the grasses are already overripe and the feed being obtained from them is of low quality) cannot be tolerated. Quite often the rights of pensioners and citizens are being ignored. The non-agricultural enterprises and organizations where these individuals work refuse without basis to provide them haying and grazing land and feed for their livestock and poultry, despite the fact that land areas, especially remote areas, are not being used as intended and considerable areas are overgrown with shrubs, weeds and at times even by forest growth.

Beyond any doubt, the role played by the private plots of citizens in solving the food problem has on the whole increased considerably over the past few years. This is primarily due to the assistance provided by the kolkhozes and sovkhoses. In 1980, the country's farms sold 14.8 million young pigs, 907,000 head of young large-horned cattle stock and 570 million chicks to the population. Are these figures large or small? It is to be noted that they are greater by a factor of 1.7-1.8 than those for 10 years ago.

However, the population's requirements for young cattle and poultry stock are still not being satisfied completely. Experience reveals that a system of assistance for private plots, one which will allow each family residing in the rural areas to maintain livestock and poultry, has still not been worked out at all of the farms.

The legal norms which authorize the extension of credit for acquiring cows and heifers are promoting the creation of the conditions required for the above. In the process, the kolkhozes and sovkhoses are entitled to repay up to 50 percent of the credit extended for these purposes using the economic incentive funds. Young livestock can be made available to young families free of charge using the resources in the fund for social-cultural measures and housing construction.

When planning production operations for agricultural enterprises, proper use must be made of the monetary resources available for strengthening the logistical base for the private plots and raising their productivity. Towards this end, the kolkhozes and sovkhoses must ensure that monetary advances are made available to the citizens

for acquiring hardware, materials and light mechanization equipment. The allotting of monetary advances to kolkhoz members and manual and office employees for the mentioned purposes is carried out using both the internal funds of the agricultural enterprises and also short term loans issued to the farms within the limits of the authorized credit.

The legal relationships involved in the fattening of public livestock and poultry on a private plot are formulated by contracts concluded on a strictly voluntary basis. Experience has underscored the effectiveness of this form of cooperation between public production and the private plots. The relationships with regard to procurements by kolkhozes, sovkhozes and other agricultural enterprises of surplus milk from the private plots of citizens are also formulated in the form of a contract.

Unfortunately however, some economic leaders apply themselves to their contractual obligations in a very formal manner. This is why a persistent need has developed for preparing legal means aimed at combating this negative phenomenon. Data obtained as a result of a study makes it possible to draw the conclusion that almost all cases involving non-fulfillment of contractual obligations concerned with providing the livestock with feed, making haying and grazing land available and also transport and technical equipment for the working of tracts of land and so forth left the economic leaders free of almost all consequences. They are credited with all types of additional payments and bonuses for having increased the production and sale of products to the state over and above the average level achieved during the previous 5 years and for increasing profits or decreasing losses.

At the present time, the fulfillment or non-fulfillment by the economic leaders of their contractual obligations for raising livestock and poultry is not adequately reflected in the indicators for the new system for crediting agricultural products sold to the state, including that purchased from citizens on the basis of contracts. In this regard, a need exists for raising the fulfillment of the obligations for the mentioned contracts to the rank of a planning indicator, upon which the issuing of material incentives to kolkhoz and sovkhoz leaders will be dependent. The introduction of such a measure would promote an improvement in the role played by those economic contracts which further cooperation between public and private animal husbandry.

The expenditures borne for the raising of livestock and poultry on private plots are viewed by many kolkhozes as being socially required. Their normative amount is established in a decision handed down during a general meeting (meeting of authorized representatives), on the basis of which a definite proportion of the expenditures of private labor on the private plot is credited towards the fulfillment of a mandatory minimum number of appearances at work in the public economy.

It bears mentioning that the livestock and poultry transferred over to a citizen on the basis of a contract, remain the property of the state or kolkhozes. The number of livestock raised on the basis of the mentioned contracts can be maintained over and above the established norms for the maintenance of livestock on a private basis by citizens. The privately owned cattle are quite another matter entirely. The terms for the sale of such surplus livestock are regulated by the norms for civil legislation. In accordance with Article 19 of the Principles of Civil Legislation for the USSR and Union Republics (Article 92 of the RSFSR GK /Civil Code/, the owner of property has the right to use it at his own discretion: to satisfy his



own requirements or to sell it on the market, through the system of consumer cooperation or state procurement organs. Thus, citizens must not be forced to turn over livestock which are being maintained within the limits of the established norms, towards fulfillment by the farm of the plan for state procurements of agricultural products.

Among a complex of measures for implementing the food program and further developing the private plots, an important role is played by improvements in legal control over those attitudes associated with the social reconstruction of the rural areas. In selecting the territory for the construction of new and the development of existing populated points, primary importance must be attached first of all to increasing the production of agricultural products. Thus a preference must be shown for the construction of one and two apartment homes of the farmstead type, having tracts of land and outbuildings for the operation of private plots.

The practice employed by some kolkhozes and sovkhoses of rejecting non-production construction work in so-called unpromising populated points does not promote the creation of the conditions required for increasing the production of goods. In our opinion, agricultural legislation should reflect a modified concept for the modernization of rural settlement, in which an important place must also be occupied by small settlements, which during a definite stage fulfill the function of auxiliary elements for increasing the production of food products.

At the present time, a considerable expansion has taken place in the opportunities available for extending long-term bank credit for the construction and capital repair of individual homes with outbuildings and for carrying out civic improvements in the rural areas. The bank institutes extend credit to citizens for the erection of individual homes, capital repairs, for equipping them with gas and for connecting them up to water supply and sewerage networks. Credit for the construction of individual homes with outbuildings is extended to builders in the amount of 3,000 rubles, with repayment spread over a period of 10 years commencing the fifth year following the completion of construction. USSR Gosbank also extends favorable credit to kolkhozes and sovkhoses for the erection of individual homes with outbuildings, in rural areas, for their own workers in the amount of the estimated cost of this construction. It is repaid over a period of 20 years following completion of the construction of the home. The kolkhozes, sovkhoses and organs of consumer cooperation must provide the individual builders with assistance in the allocation of building materials. It is also deemed advisable to increase their sales through stores.

Existing legislation does not fully reflect the interrelationships between public production and the private plots. We are of the opinion that normative control should be established over the expenditures of personal labor by kolkhoz members in the raising of public livestock and poultry on private plots. The elimination of the existing shortcoming in the regulation of the labor relationships of kolkhoz members must be accompanied by a review of the legal practice which demands a payment in kind for crops grown, or their equivalent value, when a decision is made by a kolkhoz to reduce the size of a private plot without taking into account the social value of the work performed by kolkhoz members in fulfilling their contractual obligations for the raising of livestock.

In addition, we believe that a review should be undertaken of those rules which make it possible to take away certain benefits, because of temporary disablement, from

those kolkhoz members who did not make the minimum number of appearances at work, but who nevertheless conscientiously fulfilled their contractual obligations to the kolkhoz or organ of consumer cooperation with regard to the delivery of livestock and poultry. The deprivation of such privileges is unjustified from the standpoint of the new legislation, which stimulates a further increase in the production of marketable livestock products on the private plots of citizens. Logical reasoning tells us that it is possible to introduce certain changes in the system for computing length of service at a kolkhoz: it should include those years when a kolkhoz member engaged actively in the fattening of livestock or poultry on the basis of a contract, despite the fact that during this period he lacked the minimum number of appearances at work.

It is also considered advisable to adopt a norm for the special purpose use of resources of the rural population, based upon overall proportional ownership by the state, kolkhozes and citizens, for the development of low-productivity lands, meadows, pastures and water areas. The development of private plots will be promoted by motivating the municipal population into participating more in the production of agricultural products and by granting more rights for land utilization in the rural areas upon the acquisition of homes on the basis of sales-and-purchase contracts. Here the rule concerning the impounding of unearned income and the profits of forbidden trades can serve as a guarantee for preventing the use of tracts of land for purposes other than those originally intended.

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## FORESTRY AND TIMBER

### USE OF RAW MATERIALS IN SVERDLOVSK OBLAST TIMBER INDUSTRY

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 20 Oct 82 p 2

/Article by P. Kaminskiy, head of the division of timber, woodworking and paper industry of the oblast party committee, Sverdlovsk: "Who Is Responsible for the Growth of Forests?"

/Text Sverdlovsk Oblast accounts for 6 percent of the timber procured in the country. We produce approximately the same amount of sawn timber, plywood and other products. The timber industry is one of the traditional sectors in the Middle Urals. It is more than 200 years old. In connection with this the following question arises: How long will our raw material reserves last?

The sector's scientists, specialists and economists have studied this problem for a long time. They have reached the following conclusion: If affairs continue to be managed in such a way, raw material reserves will be reduced gradually and in 30 to 40 years, to provide the oblast's industrial enterprises, it will be necessary to annually bring 4 to 5 million cubic meters of commercial timber from the country's other regions. In order that the oblast's timber industry may not lose its importance, another approach to the exploitation of forest resources is needed.

First of all, we must put an end to spontaneity. In addition to the collectives of the USSR Ministry of Timber, Pulp-Paper and Woodworking Industry, 300 enterprises of 25 ministries and departments engage in timber procurement in the oblast. They account for almost 40 percent of the total volume of output. They are mainly small enterprises. They use raw materials very inefficiently. Up to 70 percent goes into waste, which is burned. As a rule, such enterprises do not engage in reforestation. This is simply not within their power. In brief, this is the most injurious exploitation of natural resources. "Self-procurement organizations" leave behind cluttered up areas, on which young trees will not grow very rapidly.

However, the enterprises of the basic procurement organization--Sverdlesprom--have a good material and technical base. The association is interested in utilizing timber as fully as possible. Therefore, enterprises processing the waste of procurement and saw milling have been established here. More hardwood began to be used during the past five-year plan. This made it possible to preserve 35,000 hectares of forests. Simultaneously with procurement felling areas are also regenerated here.

"Self-procurement organizations" are extremely unprofitable economically. Their equipment is next to nothing, as the saying goes: Each has three to six tractors and two to six timber carriers. Nevertheless, they establish their own garages, repair shops and saw frames, which are one-half loaded and sometimes even less than that. Small enterprises are unable to build and maintain roads for timber carriers and, therefore, they use ready roads, creating counterflows and interfering with the work of those who built these roads. The labor productivity of "self-procurement organizations" is two-thirds or one-half of that in the collectives of the USSR Ministry of Timber, Pulp-Paper and Woodworking Industry and output is twice to three times as expensive.

Under the conditions of the acute shortage of manpower such management is an inadmissible luxury. Calculations have shown that, if timber procurement and processing are concentrated in the system of the USSR Ministry of Timber, Pulp-Paper and Woodworking Industry, it will be possible to disengage 3,000 workers in the oblast.

Planning bodies must finally pay attention to this and put an end to the spontaneous predatory exploitation of our forest resources.

Another aspect of this problem is no less important. Everyone knows the experience of Ivano-Frankovsk Oblast, where timber procurement and processing and reforestation were transferred to one organization. Scientific research and planning institutes together with production workers, having studied timber problems, prepared technical and economic substantiations for the establishment in Sverdlovsk Oblast of overall permanent enterprises modeled after the Prikarpatles Association. The oblast party committee and the oblast executive committee supported these proposals. We succeeded in establishing one experimental farm at the base of the Bisert' Timber Industry Establishment subordinate to the USSR Ministry of Timber, Pulp-Paper and Woodworking Industry.

The work of this enterprise is a striking example of the efficiency of overall economic management. The merging of forest plantings with timber procurement and processing did not lead to weakened control over the use of raw material resources, as the USSR State Committee for Forestry feared. Procurement proceeds very intensively here. Nevertheless, the raw material base has even improved. The area covered with forests has increased by 7,000 hectares. The exploitational reserve of timber has grown. The gap between felling and reforestation has been eliminated. Coniferous regrowth has been preserved.

The use of advanced equipment and technology made it possible to increase overall output per worker to 1,060 cubic meters with an average output of 647 cubic meters in Sverdlesprom.

Extensive possibilities for the maneuvering of manpower and equipment are opened up on such farms. During summer time procurement workers are enlisted in forestry work. In winter forestry workers are engaged in timber procurement and processing. The use of universal hangers makes it possible to improve the use of equipment.

The structure of a permanent overall enterprise makes it possible to solve a number of difficult social problems, in particular to establish well-managed settlements with a set of cultural and domestic service enterprises without fear that they will have to be abandoned some day. The Bisert' Timber Industry Establishment can also serve as an example here. Its subsidiary farm produces up to 25 or

30 kg of meat per worker and develops beekeeping and the gathering of mushrooms, berries and medicinal plants. In the settlement well-managed urban-type homes are being built and a trade center, a children's town and other facilities have been put into operation.

The collective of the timber industry establishment is now realizing the object program for waste-free production. Commodity output per cubic meter of hauled timber is to be tripled and per hectare of area covered with forests, quadrupled.

This is possible only under the conditions of permanent establishments. However, the absolute majority of procurement enterprises in our oblast, as in other republics, krais and oblasts, is still of a temporary nature. Once raw material reserves are exhausted, they move to another place. As a result, seven timber industry establishments have ceased their existence in our oblast in the last 10 years. Such an approach to work instills in forestry workers the psychology of temporary workers. As a rule, it has a harmful effect on the entire activity of the collective. Reforestation lags behind felling. Enterprise managers and public organizations are little concerned with the organization of settlements. As a result, a high personnel turnover, from which the sector so suffers, is created and maintained.

In brief, theory, practice and the accumulated experience point to the advantage of creation of overall establishments. Nevertheless, the Bisert' Timber Industry Establishment has remained an exception in the Sverdlovsk Association for several years. When in 1977 oblast organizations suggested that the USSR State Committee for Forestry popularize this experience, they were turned down.

The problem is not new. The same situation has been created in Karelia. The newspaper SOTSIALISTICHESKAYA INDUSTRIYA wrote about this in the article "Long-Drawn-Out Proceedings in Forestry" on 17 February of this year. However, there is no progress in this matter.

In his report at the 26th party congress Comrade L. I. Brezhnev, general secretary of the CPSU Central Committee, said that "... an improvement in the organizational structures of management does not tolerate inertia. A living, developing organism of economic management cannot be adapted to stagnant, ordinary forms. Conversely, forms must be brought in line with changed economic tasks." Unfortunately, old forms of economic management, which hinder progress, stubbornly persist in the sectors under discussion. Meanwhile, new tasks demand that forestry has one manager and that trees are felled by those that plant them.

In the Middle Urals conditions are ripe for an organization of overall timber enterprises at the base of timber industry establishments of the Sverdlesprom Association and timber industry establishments of the Administration of Forestry. We have a good scientific base, experimental stations and planning organizations, which will always provide enterprises with the necessary recommendations and studies. It is up to the USSR Gosplan and the USSR State Committee for Forestry, which should give their "approval" to our plans.

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